

CHAPTER ONE

Congestion Management Agency

The CMA was created by a Joint Powers Agreement (JPA), dated February 20, 1991, which became effective on May 28, 1991. The JPA has been amended twice since May of 1991 to revise the voting structure and to deal with quorum-related matters. The JPA specifies the composition of the CMA governing board; its functions, duties and powers; and other administrative matters. The JPA also sets forth many objectives for the CMA, including the following general goals:

- Position Alameda County jurisdictions, including the transit operators, to better compete for limited state and federal transportation dollars;
 - Seek a consensus on future improvements to major roads, freeways and transit services in Alameda County; and
 - Foster early communication among cities, the county and transit operators on transportation projects and issues, and on the system of roadways and transit services designated in the CMP.
- Secure reliable, ongoing funding and explore ways of doing business differently in order to provide a more cost-effective delivery of service.
 - Foster cooperative relationships within the CMA member jurisdictions and with other groups, both formal and informal.
 - Develop enhanced procedures to integrate Agency programs, such as the *Countywide Transportation Plan* and the CMP.
 - Develop new procedures and update existing procedures, as appropriate, to provide the CMA Board with appropriate management controls.
 - Position the CMA to anticipate and respond effectively to new roles and responsibilities assigned to it.

The Strategic Plan revised by the CMA in January, 1995, outlines the following organizational goals:

- Provide effective service to local government, transit operators and other interests in Alameda County. Prepare periodic reports on activities and accomplishments.
- Continue to develop the CMA's position as a leader in transportation in the Bay Area.

COMPOSITION OF THE CMA

Table 1 shows the voting structure of the CMA Board based on the current population in Alameda County. The voting representation is based on the following formula contained in the revised joint powers agreement:

- an initial vote for the Alameda County Board of Supervisors and each Alameda County city for every 50,000 population or fraction thereof;

- additional votes shall accrue to the county and cities as each jurisdiction's population reaches the midpoint of the next highest increment of 50,000 (e.g., 25,001 or more); and
- one voting representative each for AC Transit and BART.

Each city's voting representation is adjusted according to the above formula following the publication of each national census or during the intervening periods using population estimates from the California Department of Finance.

VOTING

A majority of the authorized vote of the CMA Board is required in order to:

- adopt or amend the CMP,
- adopt a resolution of conformance or non-conformance with the adopted CMP,
- approve or reject a deficiency plan that will address problems,
- adopt or amend the *Countywide Transportation Plan*,
- approve federal or state funding programs,
- adopt the annual budget, or
- levy fees or charges.

A majority vote of those present and voting is required for any other action.

FUNCTIONS AND RESPONSIBILITIES

The CMA has the following functions and responsibilities:

- Prepare, adopt, revise, amend, administer and implement the Alameda County CMP, a 5-year program aimed at reducing congestion.
- Develop, adopt and update the *Alameda County Countywide Transportation Plan*, the long-range (25 years) transportation plan for the county.
- Coordinate transportation planning and funding programs within Alameda County and with contiguous counties.
- Coordinate countywide input to:
 - the California Clean Air Act and Transportation Control Measures of the Metropolitan Transportation Commission (MTC) and the Bay Area Air Quality Management District (BAAQMD)
 - MTC guidelines for county transportation plans pursuant to Government Code Section 66531;
 - MTC's *Regional Transportation Plan*;
 - MTC's Regional Transportation Improvement Program and the California Transportation Commission's State Transportation Improvement Program and
 - the state's Traffic Congestion Relief Program.

- Prepare, adopt, update and administer the federal funding programs for Alameda County including the Surface Transportation Program and the Congestion Mitigation and Air Quality program.
- Levy and collect fees and charges, including administrative and operating costs.
- Seek state and federal funding to defray the cost of preparing, adopting, amending, administering and implementing the CMP and other CMA duties.
- Recommend projects for funding from the Alameda County share of the State Transportation Improvement Program, as specified in Senate Bill 45. In addition to recommending projects for funding, the CMA oversees project implementation to ensure that projects meet “timely use of funds” requirements and that no programmed funds are lost to Alameda County.

The CMA also acts as the program manager for the Transportation Fund for Clean Air (TFCA) in Alameda County. The TFCA program, which aims to reduce pollution by reducing the use of single-occupant vehicles, is funded through a \$4-per-vehicle registration fee and is managed by the BAAQMD. The law requires the Air District to allocate 40 percent of the revenue to each county. Other functions could be added by amendments to the JPA or by actions of the state or federal government.

For more information on the CMA’s committees, appeals process and administrative costs, see Appendix B.

Table 1 — Alameda County Congestion Management Agency Voting Structure
(based on population)

		Population* (January 2003)	# of Votes
Alameda County (unincorporated area).....		139,100.....	3
Cities:	Alameda.....	74,900.....	1
	Albany.....	16,800.....	1
	Berkeley.....	104,600.....	2
	Dublin.....	35,550.....	1
	Emeryville.....	7,550.....	1
	Fremont.....	209,000.....	4
	Hayward.....	144,700.....	3
	Livermore.....	78,000.....	2
	Newark.....	43,950.....	1
	Oakland.....	412,200.....	8
	Piedmont.....	11,150.....	1
	Pleasanton.....	67,000.....	1
	San Leandro.....	81,400.....	2
	Union City.....	70,300.....	1
Transit Operators:	AC Transit.....	na.....	1
	BART.....	na.....	1
Total Population/Vote		1,496,200	34
* State Department of Finance estimates; received May 2003.			

CHAPTER TWO

Designated Roadway System

In order to manage the transportation system, the CMA must first identify what is included in the system. California law requires that, at a minimum, the designated roadway system include all state highways and principal arterials.¹ Highways or roadways designated as part of the system shall not be removed from the system.

The statutes also refer to regional transportation systems as part of the required land-use analysis program.² In the 1991 CMP, it was presumed that the roadway system designated in the CMP was the highway/street component of this regional transportation system. All of that changed with the passage of the federal Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. ISTEA required MTC to develop a “metropolitan transportation system” that included both transit and highways.

MTC contracted with the congestion management agencies in the Bay Area to help develop the Metropolitan Transportation System and to use the CMPs to link land-use decisions to the Metropolitan Transportation System. The 1993 Alameda County CMP made a distinction between the CMP network used for monitoring conformance with the level of service standards and the Metropolitan Transportation System used for the CMP’s land-use analysis program

(see Chapter 6). The 2003+ CMP continues the use of the Metropolitan Transportation System for the CMP land-use analysis program.

The primary objective of designating a CMP system is to establish a roadway system to monitor performance in relation to established level-of-service standards. If standards are not being maintained on a specific roadway in the designated system, actions must be taken to address problems on that facility, or plans must be developed to improve the overall level of service of the system and improve air quality.

The roadway system must be detailed enough to identify significant impacts, yet still be manageable for administration. The advantage of designating a relatively detailed CMP roadway system is that it may be easier to establish a linkage between proposed development projects and their impact on the CMP system. However, too large a CMP system could become difficult and expensive for local agencies to monitor. The criteria established below attempt to strike this balance. The effectiveness of the system and the criteria that established it will be periodically reviewed to determine if changes are warranted.

RELATIONSHIP TO REGIONAL TRANSPORTATION PLAN

Given the statutory requirement that MTC must find the CMP consistent with the *Regional Transportation Plan* (RTP), the designated CMP system should be a subset of the RTP’s

¹ California Government Code Section 65089(b)(1)(A)

² California Government Code Section 65089(b)(4)

Metropolitan Transportation System. This should help to ensure regional consistency among the various CMP-designated systems, particularly for facilities that cross county borders. As noted above, the Metropolitan Transportation System is a requirement resulting from the 1991 federal transportation act. The Alameda County CMA's long-range *Countywide Transportation Plan* is the primary vehicle for coordination with the Metropolitan Transportation System. Continued coordination will be necessary to ensure consistency between Alameda County's CMP system and the Metropolitan Transportation System.

DESIGNATED CMP SYSTEM

Criteria

While the statutes require existing state highways be designated part of the CMP system, they provide no guidance for the selection of principal arterials to be included in the CMP network. After evaluation of several possible methods, the 1991 Alameda County CMP adopted an approach that provided for the systematic selection of principal arterials to include in the CMP network.

The selected approach, which met MTC's expectations for a "reasonable" CMP network designation method, relies on a concept that is central to the CMP legislation—the identification of a system that carries a majority of the vehicle trips countywide. Using the countywide travel model, an average daily traffic volume was identified that would produce a system of roadways carrying at least 70 percent of the vehicle miles traveled countywide. This approach yielded an average daily traffic of roughly 30,000

vehicles per day as a minimum threshold. Additional criteria were included to refine the definition.

The following criteria are used to establish the designated CMP roadway system:

All State Highways

- If a route is relocated or removed from the State Highway System, it will be evaluated according to the principal arterial criteria to determine whether it should remain in the CMP system.

Criteria for Inclusion of Principal Arterials

(Note: All four criteria must be met)

- Must carry 30,000 vehicles per day (average daily traffic) for at least one mile
- Must be a roadway with four or more lanes
- Must be a major cross-town connector, traversing from one side of town to the opposite side
- Must connect at both ends to another CMP route, unless the route terminates at a major activity center

The criteria for adding roadways to the CMP network will be reviewed every four years, beginning with the 1999 CMP. The criteria for adding roadways were reviewed by the CMA and the Alameda County Transportation Advisory Committee (ACTAC) in conjunction with the update of the 1999 CMP. It was determined at that time the existing criteria were appropriate and should not be modified.

ACTAC reviewed the criteria for designating roadways in spring 2003 and found that it continued to meet the original criteria of

capturing a significant amount of the system routes carrying the highest volume of travel. It was recommended that no changes be made to the criteria.

The following procedure and schedule for adding roadways to the CMP-designated system and reviewing criteria was approved by the CMA Board. The jurisdictions will review their roadway systems for routes that may meet the Criteria for Inclusion of Principal Arterials. For potential routes, each jurisdiction will conduct 24-hour traffic counts for a period including a Tuesday through Thursday of a typical week. Traffic counts should be taken around the first week in April ~~2000~~2004. The schedule is shown in Table 2.

~~In order to be in compliance with the 2003 CMP,~~ Each jurisdiction must submit potential CMP-designated routes to the CMA by June 30, 2004. The identification of routes must be based on 24-hour counts taken in spring 2004.

THE CMP SYSTEM

Table 3 lists the designated CMP system including all state highways and principal arterials that satisfy the above criteria. The entire CMP-designated system is illustrated in Figure 1. More detailed maps of the CMP-designated system for each area within Alameda County are shown in Figures 2 through 5.

The characteristics of the designated system determined in 1991 are as follows:

- The Alameda County CMP system carried 72 percent of the countywide vehicle miles traveled (VMT).
- The CMP network contains 230 miles of roadways. Of this total, 115 miles (50

percent) are interstate freeways, 89 miles (39 percent) are state highways (conventional highways), and 26 miles (11 percent) are city/county arterials.

The Metropolitan Transportation System designated by MTC is also shown in Figure 2 through Figure 5. The Metropolitan Transportation System transit corridors are shown in Figure 6 and Figure 7. The system includes the entire CMP-designated roadway system together with major arterials, transit services, rail, maritime ports, airports and transfer hubs that are critical to the region's movement of people and freight.

Local Government Responsibilities

In order to be found in conformance with the CMP, local jurisdictions must by June 30, 2004, submit a list of potential CMP-designated routes based on spring 2004 24-hour counts.

Table 2 — Schedule for CMP-Designated System

TASK	WHO	WHEN
Review Criteria for Adding Roadways	Jurisdictions	January 2003
Update Criteria in 2003 CMP	ACTAC/Board	June 2003
Identify Potential Routes	Jurisdictions	January 2004
Review Routes	ACTAC/Board	February 2004
Collect Traffic Data	Jurisdictions	March/April 2004
Review Data	ACTAC/Board	May 2004
Select CMP Designated Routes	ACTAC/Board	June 2004
Incorporate Routes in 2005 CMP	ACTAC/Board	June 2005

Table 3 — CMP-Designated System, Route List

CITIES OF ALBANY AND BERKELEY

Route	From	To	Criteria^{1, 2}
SR 123 (San Pablo)	Contra Costa County line	Emeryville city limit	State Route
University Ave.	I-80	Milvia St.	Satisfies criteria
University Ave.	Milvia St.	Shattuck Ave.	Connectivity ³
Shattuck Ave.	University Ave.	Haste St.	Connectivity
Shattuck Ave.	Haste St.	Derby St.	Satisfies criteria
Adeline St.	Derby St.	MLK Jr. Way	Satisfies criteria
MLK Jr. Way	Adeline St.	Oakland city limit	Satisfies criteria
SR 13 (Ashby Ave)	I-80	Tunnel Rd.	State Route
SR 13 (Tunnel Rd)	Ashby Ave.	Oakland city limit	State Route
I-80/I-580	University	Central	State Route

CITY OF ALAMEDA

Route	From	To	Criteria
SR 61 (Doolittle Dr.)	Oakland city limit	Fernside Blvd.	State Route
SR 61 (Otis Dr.)	Fernside Blvd.	SR 61 (Broadway)	State Route
SR 61 (Broadway)	Otis Dr.	SR 61 (Encinal Ave.)	State Route
SR 61 (Encinal Ave.)	SR 61 (Broadway)	Sherman St.	State Route
SR 61 (Central Ave.)	Sherman St.	SR 260 (Webster St.)	State Route
SR 260 (Webster St.)	SR 61 (Central Ave.)	Posey/Webster tubes	State Route
SR 260 (Posey/ Webster tubes)	SR 260 (Webster St.)	Oakland city limit	State Route
Atlantic Ave.	SR 260 (Webster St.)	Poggi St.	Satisfies criteria
Atlantic Ave.	Poggi St.	Main St.	Connectivity
Park St.	Oakland city limit	Central Ave.	Satisfies criteria
Park St.	Central Ave.	SR 61 (Encinal Ave.)	Connectivity

CITIES OF EMERYVILLE, OAKLAND AND PIEDMONT

Route	From	To	Criteria
MLK Jr. Way	Berkeley city limit	SR 24	Satisfies criteria
SR 123 (San Pablo)	Berkeley city limit	35th St.	State Route
SR 13 (Tunnel Rd.)	Berkeley city limit	SR 24	State Route
SR 260 (Posey/ Webster tubes)	Alameda city limit	I-880	Satisfies criteria
23rd/29th Ave.	Alameda city limit	I-880	Satisfies criteria
SR 77 (42nd Ave.)	I-880	SR 185 (E. 14th St.)	State Route
SR 185 (E. 14th St.)	SR 77 (42nd Ave.)	San Leandro city limit	State Route
Hegenberger Rd.	I-880	Hawley St.	Connectivity
Hegenberger Rd.	Hawley St.	SR 185 (E. 14th St.)	Satisfies criteria
SR 61 (Doolittle Dr.)	Alameda city limit	San Leandro city limit	State Route
SR 13	SR 24	I-580	State Route
SR 24	I-980	Contra Costa County line	State Route
I-80 ⁴	SF County Line	University Ave.	State Route
I-580	I-80	MacArthur Blvd.	State Route
I-880	I-980	Hegenberger Rd.	State Route
I-980	I-880	SR 24	State Route

¹ Criteria Applied: a) must carry 30,000 average daily traffic for at least one mile, b) must be a 4- or more lane roadway, c) must be a major cross-town arterial, traversing from one side of town to the opposite side, and d) must connect to another CMP route or major activity center.

² State highways and interstate freeways are included in their entirety within each jurisdiction and include all mileage within Alameda County.

³ “Connectivity” indicates that the segment has been included in the designated system to provide continuity and avoid stub ends.

⁴ A portion of this CMP route to the Emeryville border includes the city of Berkeley.

CITY OF SAN LEANDRO

Route	From	To	Criteria
SR 61 (Doolittle Dr.)	Oakland city limit	SR 61/112 (Davis St.)	State Route
SR 61/112 (Davis St.)	SR 61 (Doolittle Dr.)	SR 185 (E. 14th St.)	State Route
SR 185 (E. 14th St.)	Oakland city limit	Ashland (unincorp.)	State Route
150th Ave.	Hesperian Blvd.	I-580	Satisfies criteria
Hesperian Blvd.	SR 185 (E. 14th St.)	San Lorenzo (unincorp.)	Satisfies criteria
I-880 ⁵	Hegenberger Ave.	I-238	State Route
I-580 ⁶	MacArthur Blvd.	I-238	State Route

SAN LORENZO, CASTRO VALLEY, ASHLAND (unincorporated areas)

Route	From	To	Criteria
SR 185 (Mission Blvd.)	San Leandro city limit	Hayward city limit	State Route
Hesperian Blvd.	San Leandro city limit	Hayward city limit	Satisfies criteria
SR 238 (Foothill Blvd.)	I-238	Hayward city limit	State Route
I-880 ⁷	I-238	A Street	State Route
I-238 ⁸	I-880	I-580	State Route
I-580 ⁹	I-238	I-680	State Route

⁵ A portion of this CMP route to the San Leandro border includes the city of Oakland.

⁶ A portion of this CMP route to the San Leandro border includes the cities of Oakland and Hayward.

⁷ A portion of this CMP route in the county includes the city of Hayward.

⁸ A portion of this CMP route in the county includes the city of San Leandro.

⁹ A portion of this CMP route in the county includes the city of Pleasanton.

CITY OF HAYWARD

Route	From	To	Criteria
SR 185 (Mission Blvd.)	Ashland (unincorporated)	SR 92 (Jackson St.)	State Route
SR 92 (Jackson St.)	I-880	SR 185 (Mission Blvd.)	State Route
SR 238 (Foothill Blvd.)	Ashland (unincorporated)	SR 185 (Mission Blvd.)	State Route
SR 238 (Mission Blvd.)	SR 92 (Jackson St.)	Union City city limit	State Route
A Street	I-880	SR 238 (Foothill Blvd.)	Satisfies criteria
Hesperian Blvd.	San Lorenzo (unincorporated)	Tennyson Rd.	Satisfies criteria
Tennyson Rd.	Hesperian Blvd.	SR 238 (Mission Blvd.)	Satisfies criteria
SR 92	San Mateo County line	I-880	State Route
I-880 ¹⁰	A Street	Alvarado-Niles	State Route

CITIES OF UNION CITY, FREMONT AND NEWARK

Route	From	To	Criteria
SR 238 (Mission Blvd.)	Hayward city limit	I-680	State Route
Decoto Rd.	I-880	SR 238 (Mission Blvd.)	Satisfies criteria
Mowry Ave.	I-880	SR 84 (Peralta Blvd.)	Satisfies criteria
SR 262 (Mission Blvd.)	I-880	I-680	State Route
SR 84 (Thornton Ave.)	I-880	Fremont Blvd.	State Route
SR 84 (Fremont Blvd.)	SR 84 (Thornton Ave)	SR 84 (Peralta Blvd.)	State Route
SR 84 (Peralta Blvd.)	SR 84 (Fremont Blvd.)	SR 84 (Mowry Ave.)	State Route
SR 84 (Mowry Ave.)	SR 84 (Peralta Blvd.)	SR 238 (Mission Blvd.)	State Route
SR 84 (Niles Canyon)	SR 238 (Mission Blvd.)	I-680	State Route
SR 84	San Mateo County line	I-880	State Route
I-880	Alvarado-Niles	Dixon Landing	State Route
I-680	Scott Creek	SR 238	State Route

CITIES OF PLEASANTON, DUBLIN, LIVERMORE AND UNINCORPORATED AREAS

Route	From	To	Criteria
SR 84 (Vallecitos)	I-680	SR 84 (Holmes St.)	State Route
SR 84 (Holmes St)	SR 84 (Vallecitos Rd.)	SR 84 (1st St.)	State Route
SR 84 (1st St)	SR 84 (Holmes St.)	I-580	State Route
I-580	I-680	I-205	State Route
I-680	SR 238	Alcosta Blvd.	State Route

10 A portion of this CMP route to the Hayward border includes the city of Union City.

Figure 1 — Designated Countywide System Map

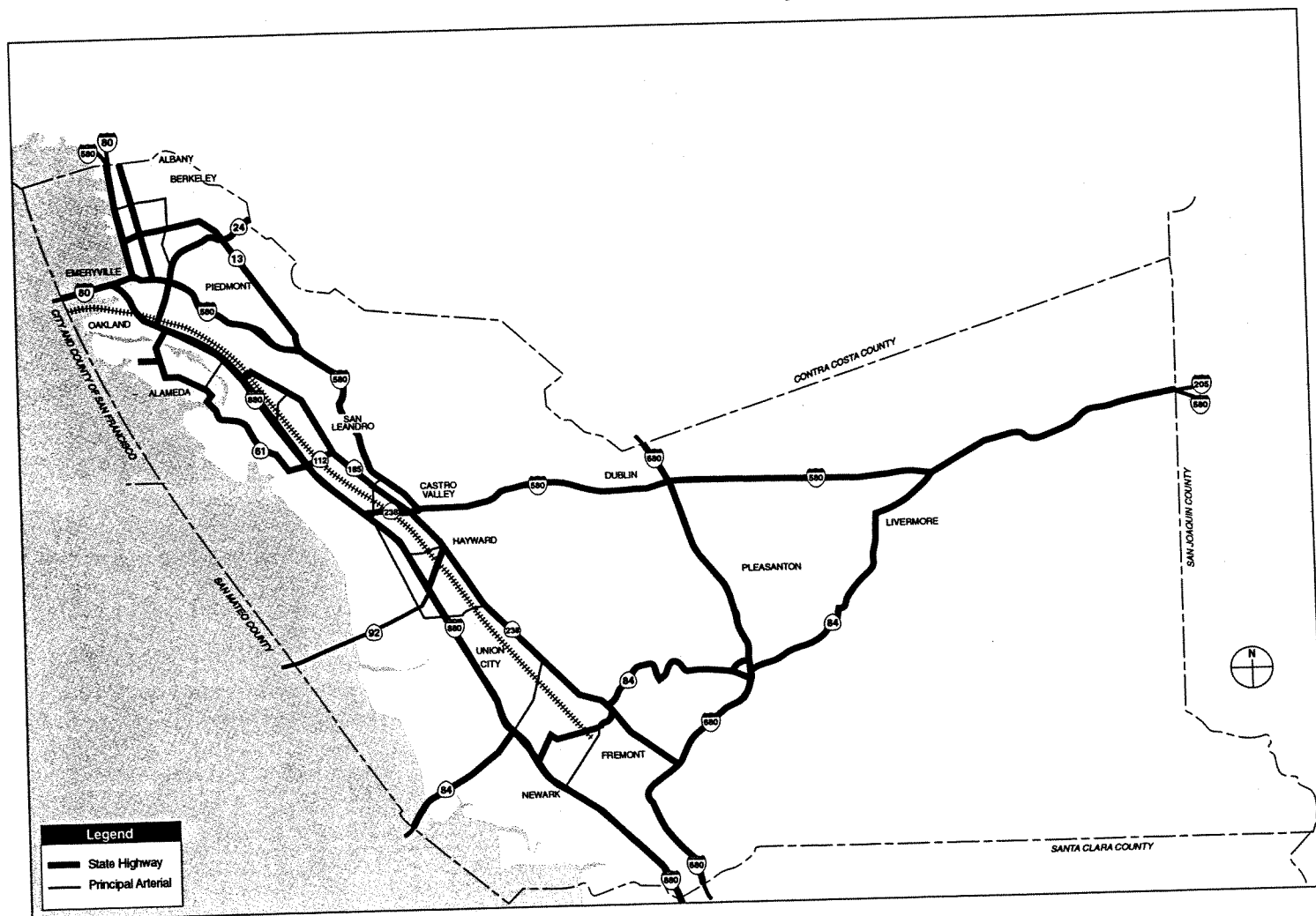


Figure 2 — Designated System Map for Alameda, Albany, Berkeley, Emeryville, Oakland and Piedmont

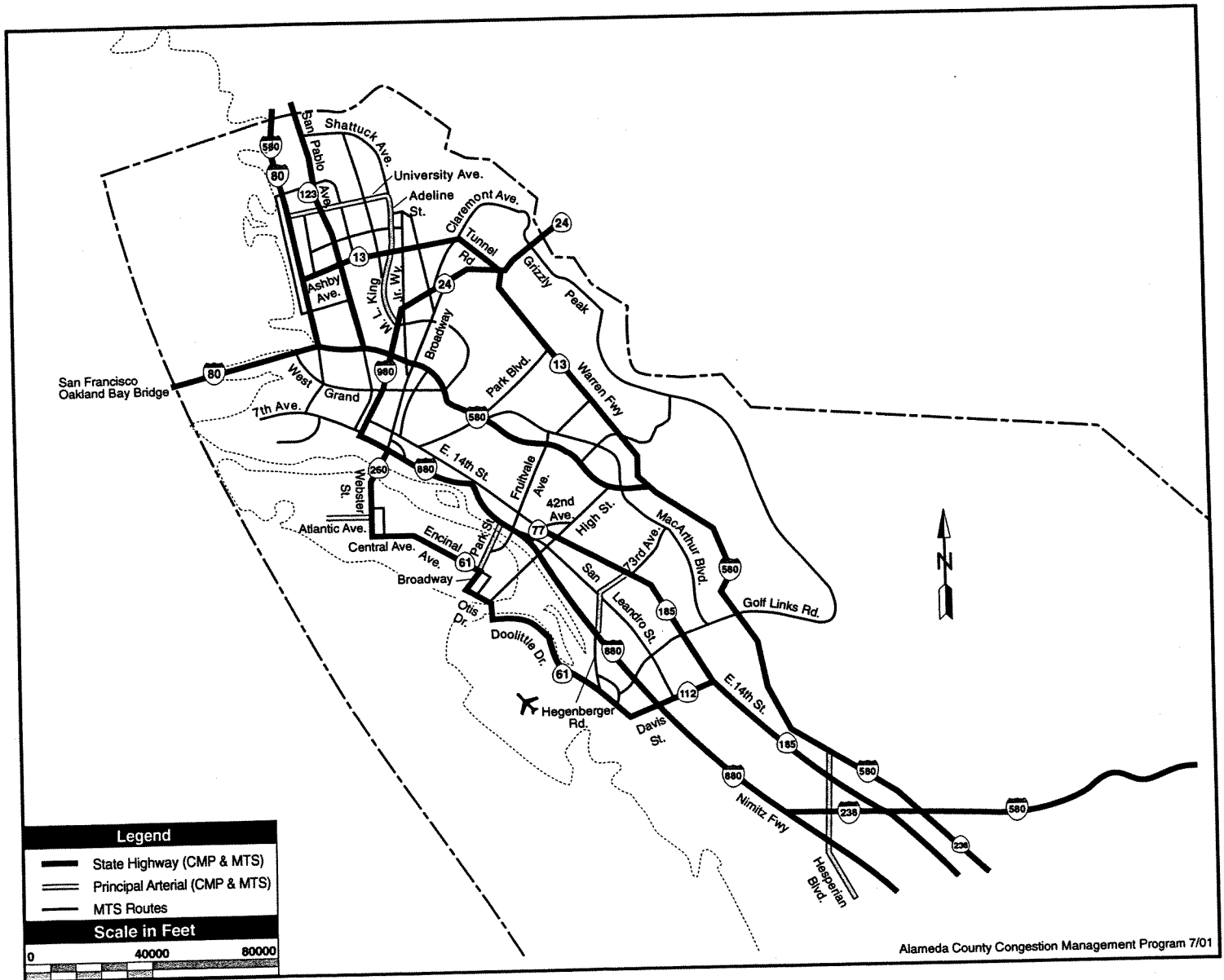


Figure 3 — Designated System Map for Castro Valley, Hayward, San Leandro and San Lorenzo

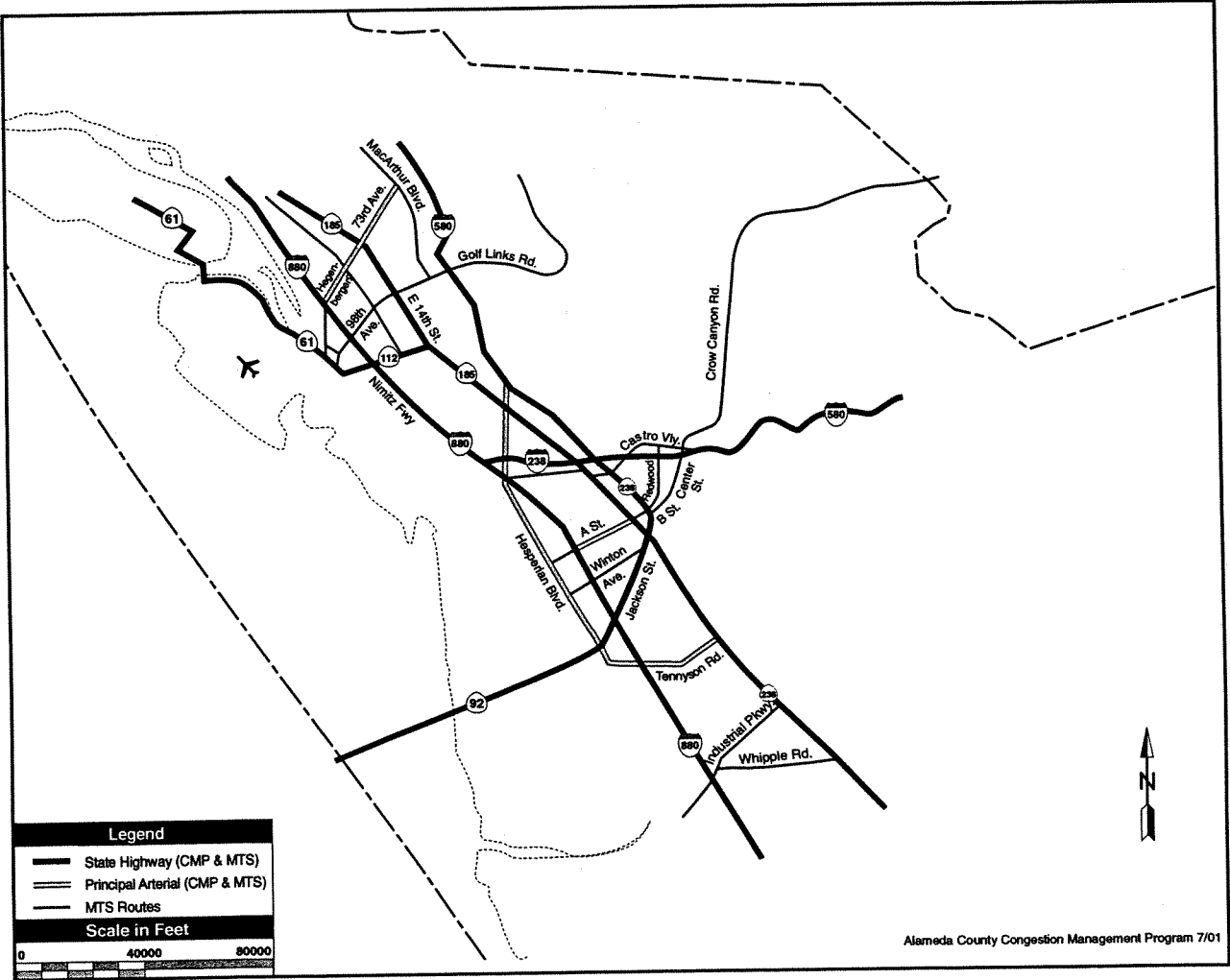
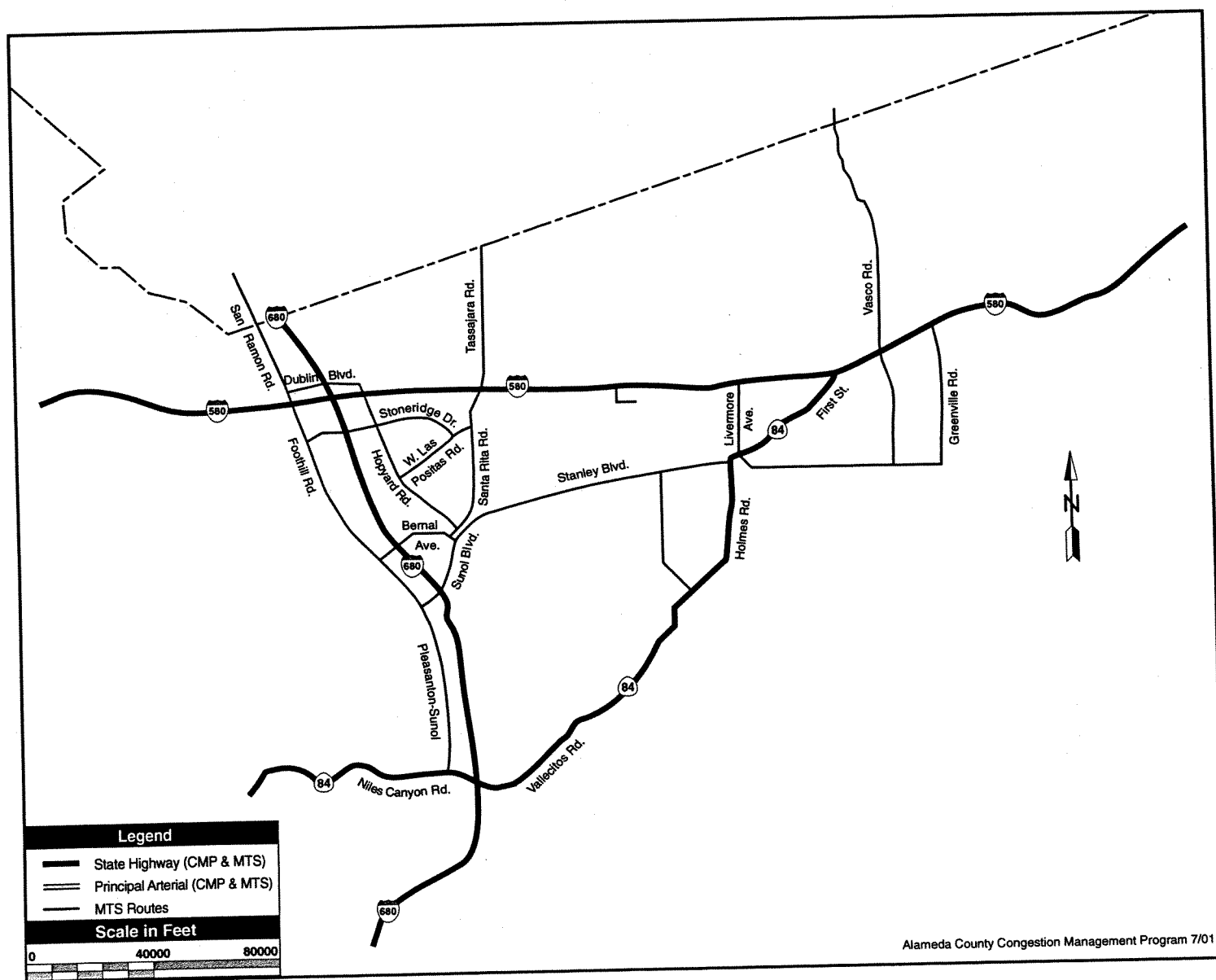


Figure 5 — Designated System Map for Dublin, Livermore and Pleasanton



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Figure 6 — Metropolitan Transportation System, Transit Corridors of Alameda County

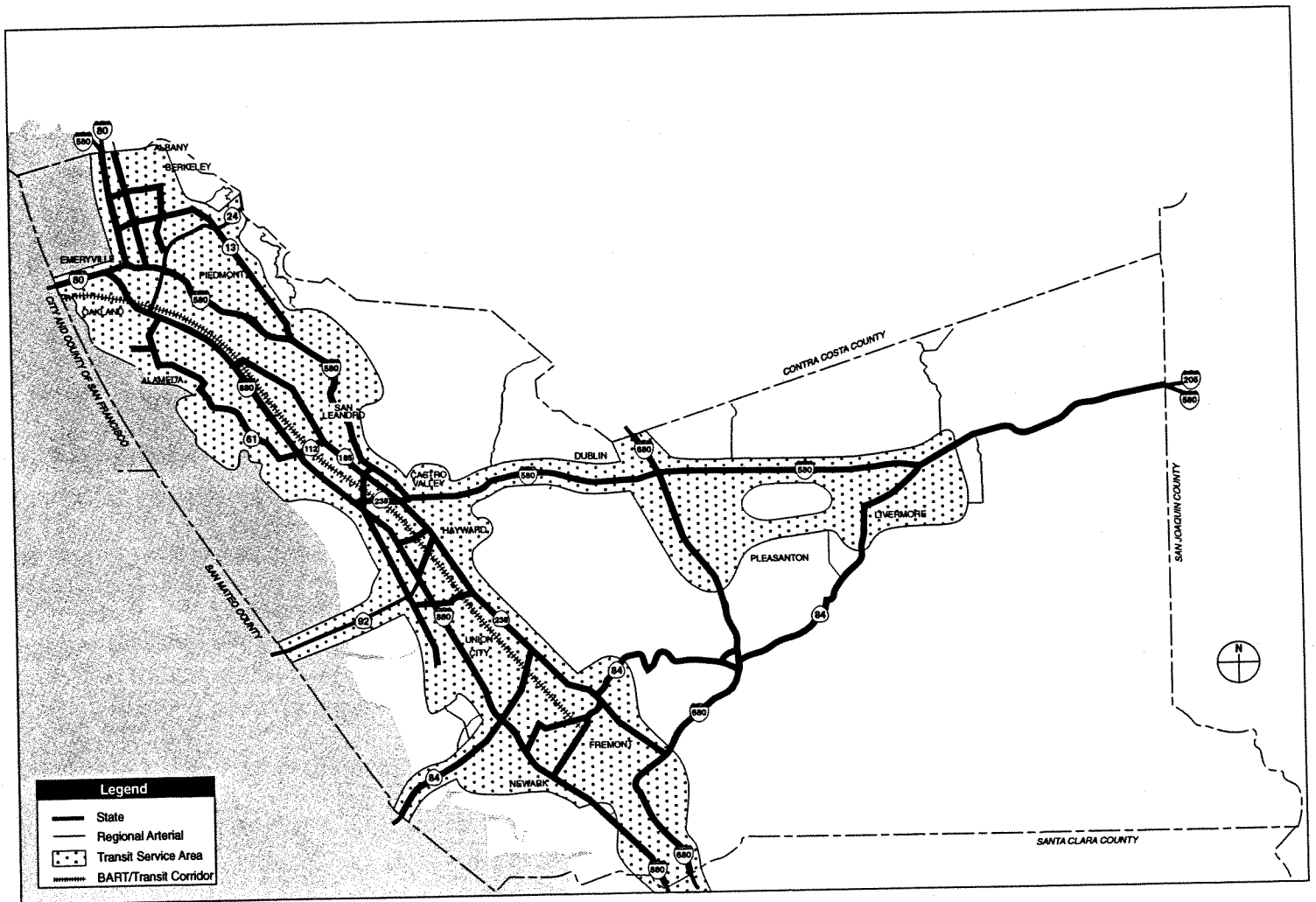
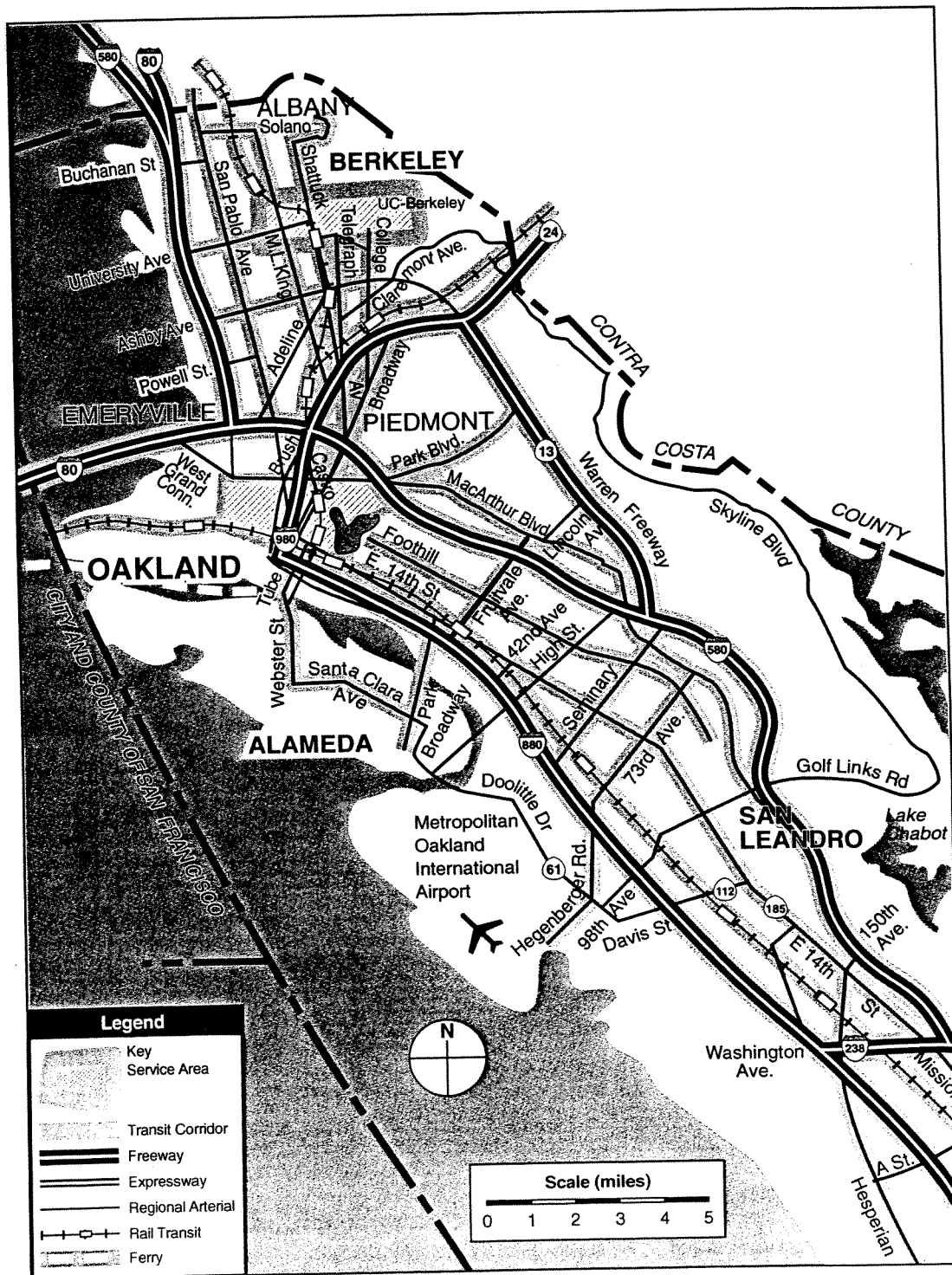


Figure 7 — Metropolitan Transportation System, Transit Corridors of Northern Alameda County Detail



CHAPTER THREE

Level-of-Service Standards

State law requires that level-of-service standards be established as part of the Congestion Management Program (CMP) process.¹ Level of service must be measured by methods described in one of the following documents: Transportation Research Board Circular 212, the latest version of the Transportation Research Board's *Highway Capacity Manual* (HCM), or a uniform methodology adopted by the CMA that is consistent with the *HCM*. The legislation leaves the choice of level-of-service measurement methodology to the CMA.

Level-of-service definitions generally describe traffic conditions in terms of speed and travel time, volume and capacity, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Level of service is represented by letter designations, ranging from LOS A to LOS F, with level-of-service A representing the best operating conditions and level-of-service F the worst. See Appendix C for graphic representation of level of service.

The purpose of setting level-of-service standards for the CMP system is to provide a quantitative tool to analyze the effects of land-use changes, and to monitor one system performance measure (i.e., congestion). If the actual system performance falls below the standard (i.e., congestion worsens to LOS F), actions must be taken to restore or improve level of service. Each year, the CMA is required to determine

how well local governments meet the standards in the CMP, including how well they meet level-of-service standards.

Each year since 1991, the CMA has contracted with a consultant to perform the necessary level-of-service monitoring for the entire CMP system. In 1998, the Board adopted a policy that level-of-service monitoring will be done every two years instead of annually. Based on this, the next monitoring study will be done in spring 2004². This has proven to be the most cost-effective approach and may continue.

Alternatively, if Caltrans assumes responsibility for monitoring the freeway system as required, or if the cities or county assume responsibility for monitoring local roads, evaluations will be structured to allow a self-certification process using Caltrans or local reports of level of service. The CMA will determine how well areas meet level-of-service standards based on these reports at the time of the annual conformance findings. The CMA will ensure that the adopted standards are monitored in a consistent manner by all local jurisdictions and/or Caltrans.

Local governments will need to consider the effects that their land-use decisions may have on the future level of service on the regional transportation system. Therefore, cities and counties may have to develop funding for projects and programs that will improve level of service on the CMP-designated system. If local land-use decisions make the level of service on

¹ California Government Code Section 65089(b)(1)(A)

the state highway system worse, cities and the county may be responsible for the necessary improvements.

To provide a basis for more definitive strategies for maintaining level-of-service standards in subareas of Alameda County, the CMA has completed a program of corridor studies in the following high-priority corridors:

- I-80
- San Pablo Avenue
- I-880
- I-238
- I-580/Altamont Pass
- I-680

~~The CMA is participating in a number of corridor studies in high-priority corridors, including:~~

- I-580 Corridor BART to Livermore
- I-680 Value Pricing
- North I-880 Safety and Operations Study
- San Pablo and I-880 SMART Corridor programs

LEVEL-OF-SERVICE STANDARDS

Goals and Objectives

Level of service indicates traffic growth trends using vehicular volumes, capacity, and measurement of average speed and delay. The objectives are to develop an approach that is consistent and therefore replicable, easy to use, non-duplicative, and compatible with local government data and travel-demand models. The approach used is outlined in Table 4.

Facility Classifications

The *HCM* provides methods for determining level of service on several types of facilities. These facilities are grouped into “interrupted-flow” and “uninterrupted-flow” facilities. Interrupted-flow facilities include city streets and surface highways (like State Route 123/San Pablo Avenue) that are part of the state highway system. For purposes of level-of-service analysis, the CMP system can be classified into three functional types of facilities: freeways, two-lane roadways and urban/suburban arterials. Each is described below:

Freeways

These are uninterrupted-flow facilities, since traffic never stops (except during the most congested periods or when incidents occur). For the 1991 CMP, the CMA, in coordination with local jurisdictions, defined appropriate segments and performed the necessary floating car runs on the freeways to obtain travel speed data. This allowed the establishment of a baseline level of service for the system, including identification of segments operating at LOS F according to freeway travel speed criteria from the *HCM*. Systemwide level-of-service monitoring has been performed annually by the CMA using the network segments defined in 1991. It is anticipated that monitoring of the freeway system may ultimately be performed by Caltrans, as required by statute (Katz, Statutes of 1995).

Table 4 — Approach to Levels of Service

ISSUE	APPROACH
Interregional Trips	As defined by statute, “interregional travel means any trip that originates outside” Alameda County. A ‘trip’ means a one-direction vehicle movement. The origin of any trip is the starting point of that trip. In accordance with MTC guidelines, trips with no trip end in Alameda County (through trips) were not subtracted for monitoring reports.
Level-of-Service Standard	The level-of-service standard is E, except where F was the level of service originally measured, in which case the standard shall be F. The method of analysis is documented in “ <i>Establishing the Existing Level of Service for the Alameda County CMP-Designated Roadway System</i> ”. The methods employed constitute a uniform methodology adopted by the CMA that is consistent with the <i>Highway Capacity Manual (HCM)</i> . Methods described in Chapter 8 (Two-Lane Highways) and Chapter 11 (Urban and Suburban Arterials) of the <i>HCM</i> were the basis for establishing the level of service on the CMP system. They assess level of service on the basis of the average speed observed along a roadway segment (link speeds), or total volumes approaching an intersection (link volumes). These methods are not designed to replace the more detailed procedures that local agencies are likely to use for non-CMP purposes (such as local impact studies) which are typically concerned with an intersection’s ability to handle individual turning movements.
Monitoring	Level-of-service monitoring will be conducted by the CMA, although the cities, county or Caltrans may eventually assume responsibility for monitoring segments under their respective jurisdictions. State statute ² requires Caltrans to monitor levels of service on the freeway system, unless the CMA designates that responsibility to another entity. Monitoring will be conducted biennially, recognizing that other surveys could be done for development impact studies (e.g., intersection turning movement counts). The method of data collection is the floating car technique of recording travel times between checkpoints based on actual travel time during the peak period. Data from several runs in all non-HOV lanes are averaged for each roadway segment.

² California Government Code Section 65089(b)(1)(A), Amended 1995.

Two-Lane Roadways

These are uninterrupted-flow facilities. The criteria for inclusion of principal arterials in the CMP system specify a minimum of four lanes; therefore, two-lane roadways are not included as principal arterials. However, two-lane state highways are included, since all state highways must be in the system. These two-lane roads constitute a fairly small portion of the CMP-designated road system mileage, but a method for level-of-service analysis is suggested here. For two-lane roads without interruptions (signals or stop signs), Chapter 8 of the *HCM* is used, based on average travel speed.

Urban/Suburban Arterials

These are multi-lane streets that have traffic signals spaced no more than two miles apart on average. Because of the emphasis in the CMP legislation on systems level planning, Chapter 11 of the *HCM* is used to estimate arterial level of service. The advantages include the need for relatively little input data, simple applied calculations and the results of explicitly determined levels of service (A, B, C, etc.). Following is a description of this method.

Level-of-Service Methodology

Urban and suburban arterials are characterized by platoon flows. Operational quality is controlled primarily by the efficiency of signal coordination and is affected by how individual signalized intersections operate along the arterial. Level of service is primarily a function of travel speed along segments, and is calculated from field data. Beyond the measurement of existing level-of-service conditions (using actual counts or travel speed measurements), the Alameda County CMA's approach is to be

forward-looking. Using the Alameda countywide travel model, future level-of-service conditions on the CMP system will be estimated by analyzing information about local land-use decisions and taking into account local investments in transportation, which are proposed in the Capital Improvements Program of the CMP. Using the Countywide Model, it is possible to forecast average travel times and speeds for future traffic operations on these arterials. The results would need to be checked for reasonableness under existing conditions before being used as a forecasting tool.

TRAFFIC MONITORING PROGRAM

Monitoring of level of service on CMP system roadways is presently conducted by the CMA. If the cities, county or Caltrans assume responsibility, monitoring could be accomplished through a self-certification process involving the local jurisdictions and/or Caltrans and the CMA. The following sections describe the process and provide guidelines.

Self-Certification Process

By June 15 of each year, a set of travel time runs would be submitted to the CMA for the CMP-designated routes. A city or the county, if it assumes responsibility, would submit the information, except for the freeways, within its jurisdictional limits. If Caltrans assumes responsibility for the freeways, it would similarly submit summary data to the CMA by June 15. Local jurisdictions or Caltrans will also be responsible for calculating levels of service according to Table 5, which is based on Chapter 11 of the *HCM*. Local agencies or Caltrans will keep raw field data available for examination by

the CMA for at least three years. Travel time runs will be completed by mid-May each year. Technical guidance and assistance in reviewing methodology and interpreting level-of-service monitoring results will be provided by ACTAC.

Data Requirements

In addition to the basic geometric, signal timing, and other such “physical” information, the traffic monitoring program requires information about average travel speed, which is the basis for level-of-service measurement on all facility types (i.e., freeways, two-lane highways (uninterrupted) and urban/suburban arterials).

For a given facility segment, monitoring must be performed and reported separately for each direction of travel. Travel speed studies normally are conducted using “floating” cars that drive at the posted (safe) speed, or if constrained by traffic conditions, at the average speed of traffic. All monitoring will be conducted during afternoon peak hours (between 4 p.m. and 6 p.m.).

Acceptability of Data

A suggested approach to ensure monitoring that is acceptable to the CMA is described in *Establishing the Existing Level of Service for the Alameda County CMP-designated Roadway System* (CMA, 1991) which is based on the Institute of Transportation Engineer’s *Manual of Traffic Engineering Studies* (Chapter 7, Test Car Method). A test car is driven six times in each direction of all CMP-designated facilities. This frequency may be adjusted later for roadway segments that are found to consistently operate at LOS A or B. More than six test car runs are performed on roadway segments operating at LOS E and F because a greater range or

fluctuation in data typically occurs. Test car runs will be repeated biennially.

The following guidelines will be used to determine acceptability of data for use in the CMP:

- Test car runs must be made on a Tuesday, Wednesday and/or Thursday, as these days will be most indicative of average weekday conditions.
- Test car runs on a particular segment must span a range of days and time of day. This means that test car runs should not be bunched on the same day of the week or taken on separate days at the same time.
- Runs near holidays, when school is not in session or when roadway construction is under way, must be avoided.
- Consistent monitoring periods must be observed for each roadway segment. For example, a comparison between April, ~~1994~~2002, and April, ~~1995~~2003, is likely to be more valid than a comparison between January, ~~1994~~2002, and August, ~~2003~~1995.
- If special generators are located within a few miles of the monitoring location, it must be determined whether unusual or unwanted activity levels are occurring at the special generator. A call to a shopping center management company, for example, could be made to ascertain that the test day(s) was reasonably close to average, and that no retailers were holding major sales.

Table 5 — Relationship Between Average Travel Speed and Level of Service**LEVELS OF SERVICE FOR ARTERIALS**

Arterial Class	I	II	III
Range of Free Flow Speeds (mph)	35 to 45	30 to 35	25 to 35
Typical Free Flow Speed (mph)	40	33	27
Level of Service	Average Travel Speed (mph)		
A	≥ 35	≥ 30	≥ 25
B	≥ 28	≥ 24	≥ 19
C	≥ 22	≥ 18	≥ 13
D	≥ 17	≥ 14	≥ 9
E	≥ 13	≥ 10	≥ 7
F	< 13	< 10	< 7

LEVELS OF SERVICE FOR FREEWAY SECTIONS

LOS	Average Travel Speed (mph)	Volume-To-Capacity Ratio	Maximum Traffic Volume (Vehicles / Hour / Lane)
A	≥ 60	0.35	700
B	≥ 55	0.58	1,000
C	≥ 49	0.75	1,500
D	≥ 41	0.90	1,800
E	≥ 30	1.00	2,000
F	< 30	Variable	-

Source: *Highway Capacity Manual*, Transportation Research Board, 1985.

Definition of Roadway Segments

For surface highways, route segments for travel time analysis have been determined by ACTAC, with input by the appropriate department (traffic engineer, planning department, etc.) at the local jurisdiction using the following guidelines:

- Segments should be at least one mile and not more than five miles in length.
- Logical segment break-points include: jurisdictional boundaries, points where the basic number of travel lanes change, locations where land-use changes occur (e.g., commercial area versus residential), points where the posted speed limit changes, or where the number of adjacent driveways is significantly different.

To date the CMA has performed all data collection (floating car runs) on the CMP-designated system of arterials and freeways. However, the CMA continues to work to ensure that the California Department of Transportation, Caltrans, will eventually assume responsibility for collecting all data necessary for determining levels of service on freeways. According to statute (Katz, Statutes of 1995), Caltrans “is responsible for data collection and analysis on state highways, unless the {CMA} designates that responsibility to another entity. The {CMA} may also assign data collection and analysis responsibilities to other owners and operators of facilities or services if the responsibilities are specified in its adopted program”.

Identification of LOS F Roadway Segments

Between July and October, 1991, the CMA completed travel time studies to establish

existing level of service on all segments of the CMP system during the p.m. peak period. The travel time studies were conducted on Tuesdays, Wednesdays, and Thursdays, between 4 and 6 p.m. The information gathered consisted of travel time runs on all CMP routes. A range of four to ten travel time runs in each direction were done to estimate average travel speeds, in accordance with CMP requirements and Institute of Transportation Engineers recommendations, as specified in their *Manual of Traffic Engineering Studies*.

Travel time checkpoints for principal arterials were generally chosen at signalized intersections; for freeways, interchange ramp junctions were used. Further detail about segment level-of-service monitoring methodology and results are contained in reports that are available by contacting the CMA.

During the 1992 monitoring cycle it was determined that freeway-to-freeway connectors had not been monitored as part of the 1991 baseline level-of-service determination. Monitoring of these segments was performed, together with the rest of the network, between August and September, 1992. Five freeway connector segments were found to be operating at LOS F, and they were grandfathered as permitted by the statutes. The level-of-service freeway-to-freeway connections are shown in Table 6.

Tables 6 and 7 and Figure 8 identify the system segments (on freeways and principal arterials) found to operate at LOS F in 1991. According to the study results, a total of 15 freeway segments (excluding freeway to freeway connectors) and 15 arterial segments were operating at LOS F during the p.m. peak period in 1991. These

segments, which operated at LOS F during 1991, the first year of the Congestion Management Program, are grandfathered from CMP requirements for preparation of a deficiency plan. However, the grandfather status does not exempt these roadways from analysis and mitigation for purposes of satisfying the California Environmental Quality Act or National Environmental Protection Act, as part of the Land-Use Analysis Program found in Chapter 6.

Grandfathered Segments

The 30 segments (15 freeway and 15 arterial) grandfathered by statute in 1991 are not exempt from analysis and mitigation for purpose of satisfying the Land Use Analysis Program (Chapter 6), the California Environmental Quality Act and the federal National Environmental Protection Act (NEPA). The CMP focuses on existing congestion, therefore strategies and/or improvements to address es grandfathered segments should be considered in corridor studies, investments in the Countywide Transportation Plan and the CMP Capital Improvement Program.

Infill Opportunity Zones

SB 1636 (Figueroa) signed by the Governor in 2002 established "infill opportunity zones" to encourage transit supportive development. The statute exempts infill opportunity zones from the requirements to maintain the Level of Service Standard, E. Infill opportunity zones must be designated by a city or the county and contain the following characteristics: zoned for new compact residential or mixed use development within fifteen 1/3 mile of an existing or future rail transit station, ferry terminal served by either a

bus or rail transit service, an intersection of at least 2-major bus routes, or within 3000 ft of a bus rapid transit corridor in counties with population over 400,000. Specific land uses are required in the 1-0.2 Infill Opportunity Zone -(see government code section 65088.1(g)).

Frequency of Monitoring

It is unlikely that a system segment will fall from LOS A to below E in just one year. To reduce calculation effort, traffic monitoring to comply with the CMP may be done only for segments in the LOS C or worse range, at the option of the local jurisdiction. Since a fair number of roadway segments operate at LOS A, it will be a poor use of limited resources to recalculate these levels of service every year. The focus should be on analyzing problem areas. Analysis of transportation impacts of proposed local land-use decisions will highlight segments, which may need to be monitored more closely. Thus, if a link is expected to be approaching LOS E or F, it will be monitored and its level of service analyzed more frequently than segments at better service levels.

COMPARISON WITH PREVIOUS RESULTS

The results of several years of level-of-service monitoring, as presented in Table 8, show that overall traffic conditions for long-distance trips on the CMP freeway network have generally remained stable or improved. Though not particularly strong, an overall trend or change can be interpreted from comparisons with the 1991 level-of-service data. There is some improvement in average traffic conditions (i.e., higher speeds) on these longer distance freeway trips over 1991 conditions. However, there are still congested points found along most of the routes. System capacity and operational

enhancements account for improvements on some facilities.

COMPLIANCE AND CONFORMANCE

Government Code Section 65089.3(a) requires the CMA to biennially monitor conformance with the adopted CMP. Among the requirements, the CMA must find consistency with the level-of-service standards. If a roadway segment is not conforming to the level-of-service standards based on the biennial monitoring, the affected local jurisdiction will be notified, and may elect to remedy the level-of-service problem or prepare a deficiency plan (see Chapter 8). If after 90 days the local jurisdiction is still in non-conformance, the CMA is required to provide notice to the California Transportation Commission and the State Controller. The notice includes the reasons for the finding and evidence that the CMA correctly followed procedures for making the determination. The State Controller would then withhold the non-conforming jurisdiction's increment of subventions from the fuel tax made available by Proposition 111, and the jurisdiction will not be eligible to receive funding for projects through the federal Surface Transportation Program and Congestion Mitigation and Air Quality Program. If within the 12-month period following the receipt of a notice of non-conformance, the CMA determines that the city or county is in conformance, the withheld Proposition 111 funds will be released. ~~If after the 12-month period the city or county has not conformed, the withheld Proposition 111 funds will be released~~ to the CMA for projects of regional significance included in the CMP or a deficiency plan.

LOCAL GOVERNMENT RESPONSIBILITIES

At present, the CMA is contracting with a consultant to monitor all segments of the CMP roadway system. If a local government or Caltrans assumes responsibility for monitoring roadways included in the portion of the CMP system under its jurisdiction, it will be required to do the following:

- Biennially monitor the level of service on the designated system and report to the CMA by June 15 of each year relative to conformance with the adopted standards.

Table 6 — Level-of-Service “F” Freeway Segments for Alameda County CMP-Designated Roadway System

These segments, which operated at LOS F in 1991, the first year of the Congestion Management Program, are grandfathered from CMP requirements for preparation of a deficiency plan. However, being grandfathered does not exempt these roadways from analysis and mitigation for purposes of satisfying the California Environmental Quality Act or the National Environmental Policy Act or as part of the Land-Use Analysis Program.

Legend:

WB Westbound
 EB Eastbound
 SB Southbound
 NB Northbound

FREEWAY SEGMENTS

	Roadway	Dir.	Limits	Jurisdiction	Average Speed (mph)
1	I-80	WB	From: University To: I-80/580 Split	Berkeley/Emeryville	16.6
2	I-80	WB	From: I-80/580 Split To: Bay Brg Toll Plaza	Oakland	29.7
3	I-80	EB	From: I-580/80 Split To: University	Emeryville/Berkeley	25.8
4	I-80	EB	From: University To: Central	Berkeley/Albany	25.8
5	SR 24	EB	From: I-580 To: Fish Ranch Road	Oakland	28.5
6	I-580	SB	From: I-80/580 To: I-980/Hwy 24	Oakland	25.6
7	I-980	EB	From: I-880 To: SR 24/I-580	Oakland	28.5
8	I-238	EB	From: I-880 To: I-580	County/San Leandro	29.8
9	I-880	SB	From: Hegenberger To: Washington	San Leandro/Oakland	29.2

	Roadway	Dir.	Limits	Jurisdiction	Average Speed (mph)
10	I-880	SB	From: Washington To: A Street	County/Hayward	24.3
11	I-880	NB	From: Tennyson To: SR 92 (Jackson)	Hayward	18.2
12	I-880	NB	From: SR 92 To: Lewelling	Hayward	23.2
13	I-880	NB	From: Dixon Landing To: SR 262/Mission	Fremont	29.3
14	SR 92	WB	From: Clawiter To: Toll Gate	Hayward/County	27.1
15	SR 92	EB	From: Toll Gate To: I-880	Hayward/County	27.5

Note: Based on surveys taken during the p.m. peak period (4 p.m. to 6 p.m.) in September/October, 1992, unless otherwise noted.

FREEWAY-TO -FREEWAY CONNECTOR

Ramp Connection	Jurisdiction	Length (miles)	Average Speed	Free Flow Speed
I-80 SB to I-580 EB*	Oakland	0.30	18.7	45.0
I-580 WB to I-80 NB*	Oakland	0.21	16.0	45.0
I-680 SB to I-580 EB	Pleasanton	0.67	16.3	35.0
SR 13 NB to SR 24 EB	Oakland	0.35	14.4	45.0
I-580 WB; SR 24 WB to I-80 NB	Oakland	0.69	22.1	45.0

Note: Based on surveys taken during the p.m. peak period (4 p.m. to 6 p.m.) in September/October, 1992, unless otherwise noted.

* Level-of-service condition was first reported during the 1991 surveys.

**Table 7 — Level of Service “F” Arterial Segments
Alameda County CMP-Designated Roadway System**

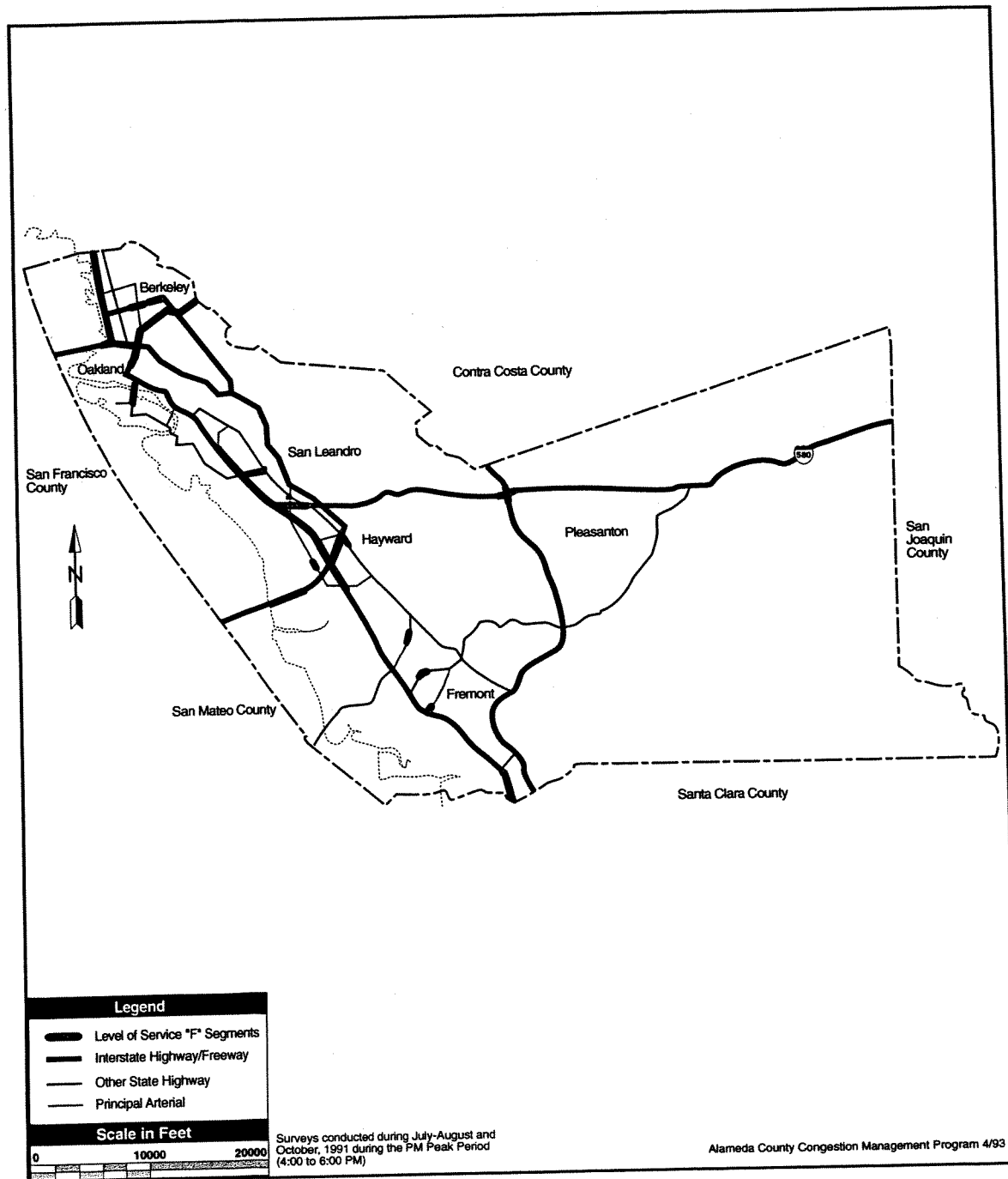
	ROADWAY	DIR	LIMITS	JURIS.	ARTERIAL CLASS	AVG SPEED (mph)
1	SR 13 - Ashby Ave.	WB	From: Telegraph To: Shattuck	Berkeley	III	8.7
2	SR 13 - Ashby Ave.	WB	From: Shattuck To: MLK, Jr Way	Berkeley	III	9.3
3	SR 13 - Ashby Ave.	EB	From: College To: Domingo	Berkeley	III	6.8
4	SR 123 - San Pablo Ave.	SB	From: Park Avenue To: 35th Street	Emeryville/ Oakland	II	9.4
5	SR 260	SB	From: 7th/Webster To: Atlantic	Oakland/ Alameda	I	12.3
6	SR 238 - Mission Blvd.	NB	From: Sycamore To: Jackson	Hayward	II	8.8
7	SH 92 (Jackson St.)	EB	From: I-880 To: Winton	Hayward	II	8.6
8	SH 92 (Jackson St.)	EB	From: Winton Ave. To: Mission	Hayward	II	4.5
9	Hesperian Blvd.	NB	From: La Playa To: Winton	Hayward	I	11.1
10	Hesperian SB	SB	From: 14th St. To: Fairmont	San Leandro	II	9.9
11	Hesperian Blvd.	SB	From: Springlake To: Lewelling	Unincorp	II	9.6
12	SR 112 (Davis St.)	WB	From: I-880 To: San Leandro Blvd.	San Leandro	II	5.2
13	Decoto Road	WB	From: Union Square To: Alvarado-Niles	Union City	II	8.6
14	SR 84 (Fremont Blvd.)	WB	From: Peralta Blvd To: Thornton Ave.	Fremont	II	7.2
15	Mowry Avenue	EB	From: I-880 To: Farwell Dr.	Fremont	II	9.6

Note: Based on surveys during the peak period (4 to 6 p.m.) in July-August and October, 1991.

Table 8 — Level-of-Service Trends on the CMP-designated System (P.M. Peak Period)

ROAD	DIR	LIMITS	DIST. (mi.)	MILES PER HOUR							
				'91	'91	'92	'94	'96	'98	'00	'02
				Aug	Oct		'93	'94	'95	'96	'97
I-80	EB	Bay Bridge Tollgate to Contra Costa line	6		23	20	<u>22</u> 21	<u>21</u> 22	<u>20</u> 20	<u>27</u> 21	<u>19</u> 21
I-80	WB	Contra Costa line to Bay Bridge Tollgate	6	26	25	24	<u>23</u> 22	<u>25</u> 23	<u>28</u> 28	<u>18</u> 25	<u>22</u> 25
I-580	EB	I-238 to I-205	31	-	56	55	<u>55</u> 55	<u>55</u> 55	<u>na</u> 50	<u>41</u> 55	<u>31</u> na
I-580	WB	I-205 to I-238	31	-	57	56	<u>57</u> 55	<u>61</u> 57	<u>na</u> 56	<u>55</u> 61	<u>55</u> na
I-580	EB	I-80 to I-238	16	-	53	52	<u>44</u> 49	<u>53</u> 44	<u>60</u> 48	<u>63</u> 53	<u>55</u> 42
I-580	WB	I-238 to I-80	16	-	58	55	<u>51</u> 56	<u>52</u> 51	<u>61</u> 50	<u>63</u> 52	<u>60</u> 54
I-680	NB	Scott Creek Rd. to Alcosta Blvd.	21	-	58	57	<u>57</u> 55	<u>52</u> 57	<u>51</u> 55	<u>58</u> 52	<u>51</u> 49
I-680	SB	Alcosta Blvd. to Scott Creek Rd.	21	-	59	58	<u>55</u> 57	<u>61</u> 55	<u>67</u> 56	<u>63</u> 61	<u>62</u> 56
I-880	NB	Dixon Landing Rd. to I-980	30	42	45	44	<u>43</u> 47	<u>46</u> 43	<u>38</u> 43	<u>48</u> 46	<u>38</u> 40
I-880	SB	I-980 to Dixon Landing Rd.	30	47	43	40	<u>38</u> 42	<u>46</u> 38	<u>50</u> 43	<u>49</u> 46	<u>41</u> 43
SR 13	NB	Mountain Blvd to Hiller Dr.	6	51	54	50	<u>49</u> 46	<u>48</u> 49	<u>53</u> 51	<u>51</u> 48	<u>50</u> 44
SR 13	SB	Hiller Dr. to Mountain Blvd	6	57	56	59	<u>53</u> 57	<u>47</u> 53	<u>59</u> 49	<u>59</u> 47	<u>55</u> 57
SR 24	EB	I-580 to Fish Ranch Rd.	5	29	30	29	<u>30</u> 30	<u>24</u> 30	<u>39</u> 29	<u>33</u> 24	<u>21</u> 30
SR 24	WB	Fish Ranch Rd. to I-580	5	53	54	58	<u>54</u> 53	<u>50</u> 54	<u>60</u> 58	<u>57</u> 50	<u>61</u> 48

Figure 8 — Level-of-Service “F” Roadway Segments



Note: These segments, which operated at LOS F in 1991, the first year of the Congestion Management Program, are grandfathered from CMP requirements for preparation of a deficiency plan. However, being grandfathered does not exempt these roadways from analysis and mitigation for purposes of satisfying the California Environmental Quality Act or the National Environmental Policy Act or as part of the Land-Use Analysis Program.

CHAPTER FOUR

Performance Element

Congestion management agencies must evaluate how well their transportation systems are doing in meeting their CMP objectives of reducing congestion and improving air quality.¹

Specifically, the CMP must contain performance measures that evaluate how highways and roads function, as well as the frequency, routing and coordination of transit services. The performance measures should support mobility, air quality, land-use and economic objectives and be used in the various facets of the CMP.

Combined with roadway level-of-service standards, the performance element will provide a basis for evaluating whether the transportation system is achieving the broad mobility goals in the CMP. These include development of the Capital Improvement Program, analysis of land-use impacts and the preparation of deficiency plans to address problems. The integration of these CMP elements may occur in the future after some experience implementing the performance element. For the 2001 CMP, implementation of the performance element will help the CMA prioritize projects for funding and development of management and operations strategies.

The Legislature intended for the performance element to include new performance measures in addition to roadway level of service and transit routing, frequency and service coordination.

However, only the roadway level-of-service standards will be used to trigger the requirement for a deficiency plan.

Guiding principles for use in the development of the Performance Element that were adopted by the CMA Board include the following:

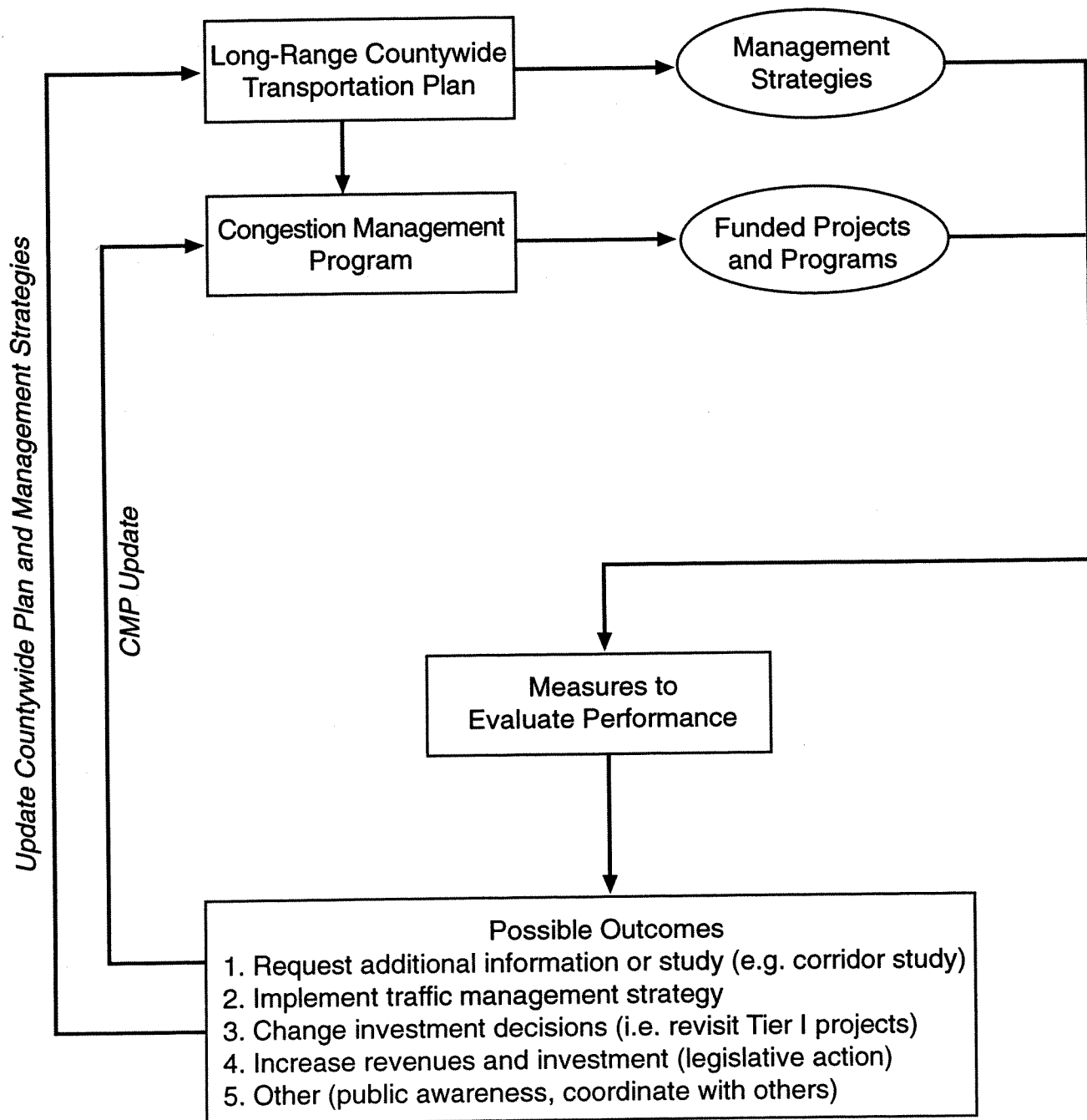
- Keep it simple and manageable.
- Be cost-effective, relying on available data and established monitoring processes.
- Use the CMA's long-range transportation goals and MTC's multimodal programming criteria as a philosophical framework.
- Use measures that can be presented in easy-to-understand and consumer-oriented terms.
- Consider an array of measures since one measure will not serve all needs.
- Satisfy state (AB 1963) and federal (ISTEA and TEA-21) requirements.

RELATIONSHIP TO ALAMEDA COUNTYWIDE TRANSPORTATION PLAN

The philosophical framework envisioned for the performance element is to relate performance measures to the (1) goals and management strategies in the 2001 *Countywide Transportation Plan* and (2) policies set forth in the CMP. Figure 9 shows how the performance element relates to other responsibilities of the CMA. Table 9 shows the relationship between performance measures and the long-range goals

¹ California Government Code Section 65089(b)(2)

Figure 9 — How Performance Measures are used in the CMP



adopted by the CMA Board. Measures of the performance of the transportation system will provide feedback on the effectiveness of management strategies and investment decisions.

PERFORMANCE MEASURES

Performance measures to be used are listed in Table 9. The measures encompass all modes of transportation. Peak and off-peak travel periods are considered for typical weekdays. Measurements of current conditions rely primarily on available data and established data collection processes.

During the 1995 update of the countywide travel model, the model was tested for applicability to forecast additional performance measures. These include:

- person trips by mode,
- vehicle volume by roadway segment,
- vehicle miles traveled by facility type,
- modal share,
- volume-to-capacity (v/c) ratios by facility type,
- vehicle hours of travel by facility type,
- lane miles by v/c ratio, and
- capital costs.

The Model Update Report also recommended some additional measures that could be implemented with additional work. These include:

- person miles traveled by mode,
- passenger boarding by operator or line,

- travel time by mode,
- travel speed by mode,
- key trip interchange travel time by mode,
- vehicle hours of delay by facility type,
- duration of congestion by facility,
- households within target drive time of employment center,
- households within target transit time of employment center,
- time spent in congestion, and
- transit accessibility.

A more detailed description and definition of each adopted performance measure is presented below.

Acceptability of Data

A suggested approach to ensure that data collection methods are acceptable to the CMA is described in “Establishing the Existing Level of Service for the Alameda County CMP-designated Roadway System”.² This applies to speed and travel time data. An ongoing process will be necessary to review definitions and methods to ensure that the information is collected in a consistent manner prior to use in trend analyses.

System Definition

While the statutes clearly require designation of a CMP system for purposes of level-of-service monitoring, they provide no guidance for the selection of a system for the performance element.

² Abrams Associates, November 26, 1991

Table 9 — Performance Measures

PERFORMANCE MEASURE	LONG-RANGE GOAL	OBJECTIVE IN STATUTE	REQUIRED DATA	HOW RESULTS CAN BE USED	CAUTIONARY NOTES CONCERNING USE OF THE DATA
Average Highway Speeds	Improve Mobility Air Quality	Mobility Air Quality	Current Requirement Average speeds on CMP network	Level of Service determinations. Trigger Deficiency Plans. Evaluate direct effectiveness of projects in relieving congestion.	Adequate for determining CMP conformance. Caution in use as a measure of mobility.
Travel Time Transit, Highways, HOV Lanes	Improve Mobility Increase Transit Use Improve Air Quality	Mobility Air Quality Land Use	Average travel time between selected origin-destination pairs. Obtain from annual level-of-service monitoring data and transit schedules	Useful in analyzing trends, comparing alternatives or as an evaluation of the effectiveness of the Countywide Transportation Plan. Problems can be spotted for targeted investment. Can compare travel times via roadway and transit along major corridors.	Caution in a reliance on data collected on a few days each year which is not always representative of conditions throughout the year.
Duration of Traffic Congestion	Enhance Economic Vitality (Expedite freight movement)	Economic Air Quality	Hours of Congestion at key locations	Could be used as trigger for certain traffic management strategies to contain congestion to normal peak periods to maintain smooth truck travel during mid-day.	Caution in a reliance on data collected on a few days each year which is not always representative of conditions throughout the year.
Roadway Maintenance	Ensure serviceable operation of existing facilities	Economic	MTC's Pavement Condition Index	\$ amount of maintenance backlog for MTS roadways. Useful in guiding investment decisions for roadway maintenance needs.	Reliability dependent on subjective assumptions made by local agency staff. Assumptions can change annually depending on staff person conducting the estimate.
Roadway Accidents on Freeways	Improve mobility, Ensure serviceable operation of existing facilities	Mobility Air Quality	Number of accidents/ number of miles; From Switter/ TESIS System	Identify safety issues. Useful in guiding investment decisions.	Data not available for local streets/roads. Accidents may not be caused by physical facilities.

PERFOR- MANCE MEASURE	LONG- RANGE GOAL	OBJECTIVE IN STATUTE	REQUIRED DATA	HOW RESULTS CAN BE USED	CAUTIONARY NOTES CONCERNING USE OF THE DATA
Completion of Countywide Bike Plan	Improve Mobility, Air Quality	Mobility Air Quality	Miles and Percent Completion of Bikeway Plan	Progress toward a connective system of countywide bikeways	Does not reflect actual use of bicycle facilities.
Transit Routing	Improve transit access and Increase transit use	Mobility Air Quality Land Use	Current CMP requirement	To determine area coverage and proximity of transit service to residential areas and job centers.	Proximity to transit stops or stations is an important indicator of accessibility, however, the data is difficult to collect.
Transit Frequency	Improve transit access and Increase transit use	Mobility Air Quality Land Use	Current CMP requirement Number of lines operating at each frequency level	To determine convenience of transit service.	
Coordination of Transit Service	Improve transit access and Increase transit use	Mobility Air Quality	Current CMP requirement	To determine reliability and convenience for travelers connecting between services.	Current CMP requirement does not provide much information.
Transit Ridership	Increase transit use	Economic Air Quality Land Use	Number of patrons	Trend analysis; comparison between operators	Does a loss of transit ridership indicate that investment in transit should increase or decrease?
Transit Vehicle Maintenance	Ensure serviceable operation of existing facilities	Air Quality	Mean time between Service Delays (BART) and Miles between Mechanical Road Calls (AC, LAVTA, Union City Transit)	Trend analysis; comparison between operators. Transit agencies have internal standards for comparison and investment allocation decisions.	

The Metropolitan Transportation System is proposed for use in the Performance Element. The Metropolitan Transportation System is recognized by MTC in the context of programming decisions as well as in estimating roadway maintenance needs. The Metropolitan Transportation System is also recognized by the CMA in the Land-Use Analysis Program as the focus of transportation analyses.

Description of Performance Measures

Average Highway Speeds

As currently measured by the CMA, this is the average travel speed of vehicles over specified segments measured in each lane during peak periods. This measurement is made a sufficient number of times to produce statistically significant results.

Travel Time

Calculated for up to 10 pairs of origins and destinations (O-D) using floating car data to determine average roadway travel time and transit time between these O-D pairs. These O-D pairs will reflect major corridors in Alameda County.

Duration of Traffic Congestion

As defined by Caltrans, this is the period of time during either the a.m. or p.m. peak that a segment of roadway is congested (average speed is less than 35 m.p.h. for 15 minutes or more). Data are collected by Caltrans from floating car runs conducted in April/May and September/October each year and reported annually. The CMA may be able to collect similar data on the remainder of the CMP

network by conducting floating car runs earlier or later, where necessary, to observe the beginning and ending of the congested period.

Roadway Maintenance

As defined by MTC, this is based on the roadway Pavement Condition Index (PCI) used in MTC's Pavement Management System. The PCI is a measure of surface deterioration on streets and roads.

Roadway Accidents

The number of accidents per one million miles of vehicle travel. The data is collected by Caltrans as a part of the State Switzer/TASIS System.

Percent of Countywide Bike Plan Completed

Will be measured in terms of the number of miles and the percentage completed of the countywide bikeway plan.

Transit Routing

Refers to both the pattern of the transit route network (e.g., radial, grid, etc.) and the service area covered (e.g., percent of total population served within one-quarter mile of a station/bus stop or percent of total county served, etc.). Measurement of routing performance may be applied at the corridor or screenline level, to give operators flexibility in locating service routes.

Frequency of Transit Service

Refers to the headway, which is the time between transit vehicles (e.g., one bus arrival every 15 minutes). Service should be frequent enough to encourage ridership, but must also consider the amount of transit ridership the

corridor (or transit line) is likely to generate, as well as the capacity of the existing transit service in that corridor.

Coordination of Transit Service

Refers to coordination of transit service provided by different operators (e.g., timed transfers at transit centers, joint fare cards, etc.). Performance should be aimed at minimizing inconvenience to both the infrequent and frequent user. The information provided by transit agencies should address the questions: Is there coordination and how convenient is it?

Transit Ridership

The number of average daily passengers boarding or deboarding transit vehicles in Alameda County.

Transit Vehicle Maintenance

AC Transit and the Livermore-Amador Valley Transit Authority refer to “Miles between Mechanical Road Calls” as a measure where mechanical road calls are defined as the removal of a bus from revenue service due to mechanical failure. BART and ACE have a related term known as “Mean Time Between Service Delays.” Delays can be caused by personnel or by mechanical failures.

TRANSIT SERVICE PERFORMANCE MEASURES

The following transit service performance measures proposed for CMP purposes are derived from the service standards of the transit operators in the county as expressed in their short-range transit plans or other policy documents.

Performance Measures for Transit Frequency

Table 10 shows performance measures for bus and rail transit in Alameda County. These measures apply to both existing services and future year (proposed) services.

For ferry services from Alameda and Oakland to San Francisco, the frequency measure is one vessel per hour during the a.m. and p.m. peak periods.

There is currently no light-rail service in Alameda County. Light rail is being investigated as a service alternative by AC Transit for several corridors.

Performance Measures for Routing of Transit Services

Performance measures for routing and area coverage vary by transit operator. AC Transit bases its current and future year bus route spacing (the average distance between bus lines) on residential densities, the location of major activity centers, topography and street patterns. Route spacing in commercial areas is determined by location, level of activity and layout of the development, on a case by case basis.

For existing and future services, the Livermore-Amador Valley Transit Authority proposes the following performance measures:

- Ninety percent of the population should be within a one-half-mile radius of peak-period transit service, not including services with fewer than three trips in each peak period, and 80 percent of the population should be within a one-half-mile radius of midday transit service.

- Ninety percent of employment centers with 100 or more employees should be served by 30-minute peak-hour headways.

For existing and future services, Union City Transit proposes the following performance measures:

- Ninety percent of all land with three or more dwelling units per acre within one-quarter-mile of a transit route
- Ninety percent of major activity centers within one-eighth-mile of a transit route

BART proposes an existing and year 2010 load factor (i.e., the number of persons on board divided by the number of seats) of 1.15 during peak period and a load factor of 1.0 during off-peak hours. The average peak hour, peak direction transbay load factor for the four routes is 1.35.

Table 10 — Performance Measures for Frequency of Transit Service

SERVICE TYPE	TIME OF DAY				
	Peak	Midday	Night	Owl	Sat/Sun/Holiday
	(minutes between services)				
Bus					
Primary Trunk	15	15	30	60	15
Secondary Trunk	15	30	30		30
Local	30	30	60		60
Suburban Local	45	60			
Transbay Basic	15	30	60		60
Transbay Express	30				
East Bay Express	30				
BART Express Bus*	60				
Rail					
BART	3.75-15		up to 20 (off-peak)		
Ferries	60	60			60

* As of July 1, 1997, operating responsibility for BART express bus service was transferred from BART to local operators, i.e., LAVTA and County Connection, except for the service in the I-80 corridor. Responsibility for this service was transferred to WestCat on July 1, 1998.

Performance Measures for Coordination of Transit Service

A number of measures are in place to ensure coordination among transit operators. They include Senate Bill (SB) 602, legislation preceding SB 602, MTC Resolution No. 3055 (Inter-operator Transit Coordination Implementation Plan) and others. All transit operators in Alameda County will continue to implement the coordination projects required under these guidelines. The projects are specified each year in agreement among the operators and MTC. They relate to coordination of the following:

- fare
- schedule
- service
- public information
- marketing
- administration

Review Process

The CMA will prepare an annual transportation performance report for review by local agencies and transit operators prior to publication. The report will include the most current available data from the various agencies that will serve as sources of data; however, the CMA will accept performance data that is up to two years old. The report will be available prior to the time when the CMA prioritizes transportation improvements for inclusion into the Countywide Transportation Plan and *Regional Transportation Plan* (RTP).

Preparation of the transportation performance report is recommended for the April-May period to coincide with the development of the project prioritization for the *Countywide Transportation Plan*, which occurs in the spring of even-numbered years and the availability of the Caltrans' highway congestion monitoring data.

The transportation performance report will include estimates of population growth during the preceding year, available from the State Department of Finance. The 2001 Performance Report is available upon request at the CMA offices.

LOCAL GOVERNMENT AND TRANSIT AGENCY RESPONSIBILITIES

To minimize cost, the CMA will rely on established data collection processes and regularly published reports for data. A list of established data collection efforts, by agency, follows:

Cities and County

- Pavement Management System data for the Metropolitan Transportation System (except Albany and Oakland)
- Countywide Bicycle Plan (County Public Works Department and CMA)

Transit Agencies

- Service Schedules, On-Time Performance
- Transit Ridership Routing (percentage of major centers served within 1/4-mile of a transit stop)

- Frequency (number of lines operating at each frequency level)
- Service Coordination (number of transfer centers)
- Average Time between Off-Loads (BART)
- Miles Between Mechanical Road Calls (AC Transit, LAVTA and Union City Transit)
- Mean Time Between Service Delays (BART and ACE)
- Land-Use Analysis Program - Tier II (review of cumulative effects of land developments)
- environmental studies for transportation improvements
- corridor studies
- development of the CMP Capital Improvement Program

MTC

- Roadway Maintenance Needs

Caltrans

- Freeway Speed Runs, Duration of Freeway Congestion
- Accident Rates on State Freeways

CMA

- Roadway Speeds on CMP, except freeways
- Travel Times for O-D pairs

COMPLIANCE AND CONFORMANCE

Local agencies are encouraged to provide PMS data to MTC or maintain their own database of maintenance needs on the Metropolitan Transportation System. However, there are no compliance requirements for local agencies or transit operators related to the Performance Element.

In the future, the CMA may consider the use of one or more performance measures in the development of:

CHAPTER FIVE

Travel-Demand Management Element

Continued economic and population growth in the Bay Area and Alameda County will place an increasing demand on the region's transportation system. Other chapters of Alameda County's Congestion Management Program focus on providing a sufficient supply of transportation facilities and services to meet projected demand. This chapter, on the other hand, focuses on "demand-related" strategies that are designed to reduce the need for new highway facilities over the long term and to make the most efficient possible use of existing facilities. This element also incorporates strategies to integrate air quality planning requirements with transportation planning and programming.

CONTINUING DEVELOPMENT

The establishment of regionwide travel-demand management programs continues to evolve. This element takes steps toward tailoring such programs to the needs of Alameda County.

State law¹ requires that the trip-reduction and Travel-Demand Management Element:

- promote alternative transportation methods, including but not limited to carpools, vanpools, transit, bicycles and park-and-ride lots;
- promote improvements in the balance between jobs and housing;

- promote other strategies, including but not limited to flexible work hours, telecommuting and parking management programs; and
- consider parking cash-out programs.

A parking cash-out program is defined as an employer-funded program under which an employer offers to provide a cash allowance to an employee equivalent to the parking subsidy that the employer would otherwise pay to provide the employee with a parking space.² "Parking subsidy" means the difference between the out-of-pocket amount paid by an employer on a regular basis in order to secure the availability of an employee parking space not owned by the employer and the price, if any, charged to an employee for use of that space. Furthermore, the parking cash-out programs apply to employers of 50 or more persons in air basins designated as "nonattainment" areas.³

The CMA and Bay Area Air Quality Management District (BAAQMD) are required to coordinate the development of trip-reduction responsibilities and avoid duplication of responsibilities between agencies. However, cities and other local jurisdictions can establish their own travel-demand management programs that go beyond what the CMA and BAAQMD

¹ California Government Code Section 65089(b)(3)

² Section 65088.1 of the Government Code and Section 43845 of the Health and Safety Code

³ Section 43845 of the Health and Safety Code

develop, but they cannot require employers to implement an employee trip-reduction program unless the program is required by federal law.⁴

ALTERNATIVE TRANSPORTATION METHODS

Both the public and private sectors should encourage the use of alternatives to the single-occupant automobile. By reducing the number of vehicle trips during commute periods, congestion can be reduced and vehicle-miles traveled under congested conditions can be decreased, thereby improving air quality.

Switching to buses or trains, increasing the number of occupants in each vehicle (autos, vans, or buses), or increasing the number of people walking or bicycling will improve the efficiency of the transportation system, particularly during the system's peak demand periods.

The *Countywide Transportation Plan* recognizes the importance of alternative modes, especially transit, in the county's transportation system. One of the goals of the plan is to improve transit

⁴ Section 40929, added to the Health and Safety Code by SB 437 (Lewis) states: 40929 (a) Notwithstanding Section 40454, 40457, 40717, 40717.1, or 40717.5, or any other provision of law, a district, congestion management agency, as defined in subdivision (b) of Section 65099.1 of the Government Code, or any other public agency shall not require an employer to implement an employee trip reduction program unless the program is expressly required by federal law and the elimination of the program will result in the imposition of federal sanctions, including, but not limited to, the loss of federal funds for transportation purposes. (b) Nothing in this section shall preclude a public agency from regulating indirect sources in any manner that is not specifically prohibited by this section, where otherwise authorized by law.

access and increase transit use. In order to accomplish this goal, the plan places a priority on securing a reliable source of funding for transit investment and operations.

The following policies and programs, undertaken cooperatively by local government, the CMA, MTC, BAAQMD, Caltrans and the private sector, are intended to: promote the use of transit, carpools, vanpools; increase average vehicle occupancy; encourage bicycling and walking as forms of transportation; and encourage telecommuting to reduce commute travel demand.

MAKING TRAVEL-DEMAND MANAGEMENT INTEGRAL TO CONGESTION MANAGEMENT

Historically, travel-demand management has been isolated from the planning and programming mainstream. It has not been an integral element of plans for capital improvement or system management. Nor have individual travel-demand management projects been appraised from a systems or corridor point of view. Figure 10 shows how travel-demand management activities can be conceptualized as an integral element of an overall strategy of congestion management. They overlap with transportation system management in coordinated implementation of high-occupancy-vehicle lanes and transit operating subsidies; and overlaps with capital improvements with investment in bicycle and pedestrian facilities, transit capital facilities and construction of high-occupancy-vehicle lanes as well as operational improvements to freeways and roadways.

A BALANCED TRAVEL-DEMAND MANAGEMENT PROGRAM

A balanced program requires actions that would be undertaken by local jurisdictions, the CMA, MTC, BAAQMD, Caltrans and local transit agencies.

The following policies represent a framework of realistic expectations for proposed actions that should be taken by the CMA and local governments as well as complementary actions that should be taken by regional and state agencies. The basic principle of the program is that travel-demand management activities should be effectively integrated with the CMP so that capital investment, system management and demand management can produce results that make a cumulative contribution to the CMA's efforts to contain congestion, provide alternatives to solo driving and sustain progress toward clean air.

Local Governments

Local governments should adopt site-design guidelines that enhance transit, pedestrian and bicycle access. They should also work with transit agencies to establish bus shelters which display easily understood information about routes and schedules.

The CMA

The CMP should provide a framework for integrating demand management, system management and capital investment in an overall strategy for containing congestion, reducing vehicular emissions and providing attractive alternatives to solo driving.

The CMA's funding policies should encourage multi-jurisdictional projects such as SMART

Corridors to promote seamless operations across jurisdictional boundaries, a multimodal approach to system management and system efficiency and safety.

MTC, CMA and BAAQMD

The CMA should seek maximum flexibility for providing its share of ridesharing funding. Historically, the CMA and MTC have funded the regional rideshare program.

Transit Agencies

Transit operators should continue to work with each other to develop cooperative plans for the coordination of line-haul and feeder services.

Transit agencies should work with Caltrans to develop cooperative plans for high-occupancy-vehicle-lane express bus service and with local governments to establish bus shelters that include clear route and schedule information.

ALAMEDA COUNTY TRAVEL-DEMAND MANAGEMENT PROGRAM

The travel-demand management program as shown in Table 11 includes four elements:

- a Required Program, which includes those actions local government *must* take in order to comply with the CMP;
- a Countywide Program, which includes those actions the CMA will take to support and supplement local efforts;
- a Regional Program, which includes those actions state and regional authorities should take to support travel-demand management programs areawide; and

- the Comprehensive Program includes all of the actions above, plus others that can be recommended for employers on an entirely voluntary basis.

Funding sources, lead agency and other partners are provided for each element. Taken together, the program represents a fiscally realistic program that would effectively complement the CMA's overall Congestion Management Program.

Required Program

The Required Program requires that local jurisdictions adopt and implement guidelines for site design that enhance transit, pedestrian and bicycle access. This requirement can be satisfied by a local jurisdiction through:

- adoption and implementation of design strategies for encouraging alternatives to auto use through local development review prepared by ABAG and the BAAQMD.
- adoption and implementation of new design guidelines that meet the individual needs of the local jurisdiction and maintain the intent of the Travel-Demand Management Element to reduce the dependence on single-occupant vehicles.
- demonstration that existing policies meet the intent of the Travel-Demand Management Element to reduce the dependence on single-occupant vehicles.

In order to ensure consistency among all jurisdictions, a Travel-Demand Management Checklist was prepared identifying components that should be included in local design guidelines (Appendix D). The checklist was approved by the Board upon recommendation from ACTAC.

Local jurisdictions are also required to implement capital improvements that contribute to congestion management and emissions reduction. This requirement can be satisfied by participation in the state Transportation Fund for Clean Air and federal Surface Transportation Program and CMAQ programs. The Capital Improvement Program incorporates numerous project types and programs that are identified in the Transportation Control Measures Plan. The ~~Capital Improvement Program projects that address specific TCMs~~ are listed in Appendix E.

Countywide Program

The Countywide Program includes actions by the CMA to support the efforts of local jurisdictions. Financial incentives such as the Parking Cash-out Program, the Guaranteed Ride Home program, and support of telecommuting have been undertaken by the CMA. In order to further support alternative methods of transportation the CMA will embark on the Dynamic Ridesharing Pilot Project. The program will examine whether "instant carpool matching" is acceptable to the public and cost effective.

Regional Program

The Regional Program includes actions by MTC, BAAQMD and Caltrans to meet areawide needs. The regional program focuses primarily on financial support for those activities that ensure coordinated transit, high-occupancy-vehicle utilization, development and/or maintenance of park and ride lots, implementation of ramp metering and arterial improvements, Americans with Disabilities Act, and bicycle and pedestrian improvements.

Comprehensive Program

In recognition that the private sector also has a role in travel-demand management, elements of the Comprehensive Program includes those

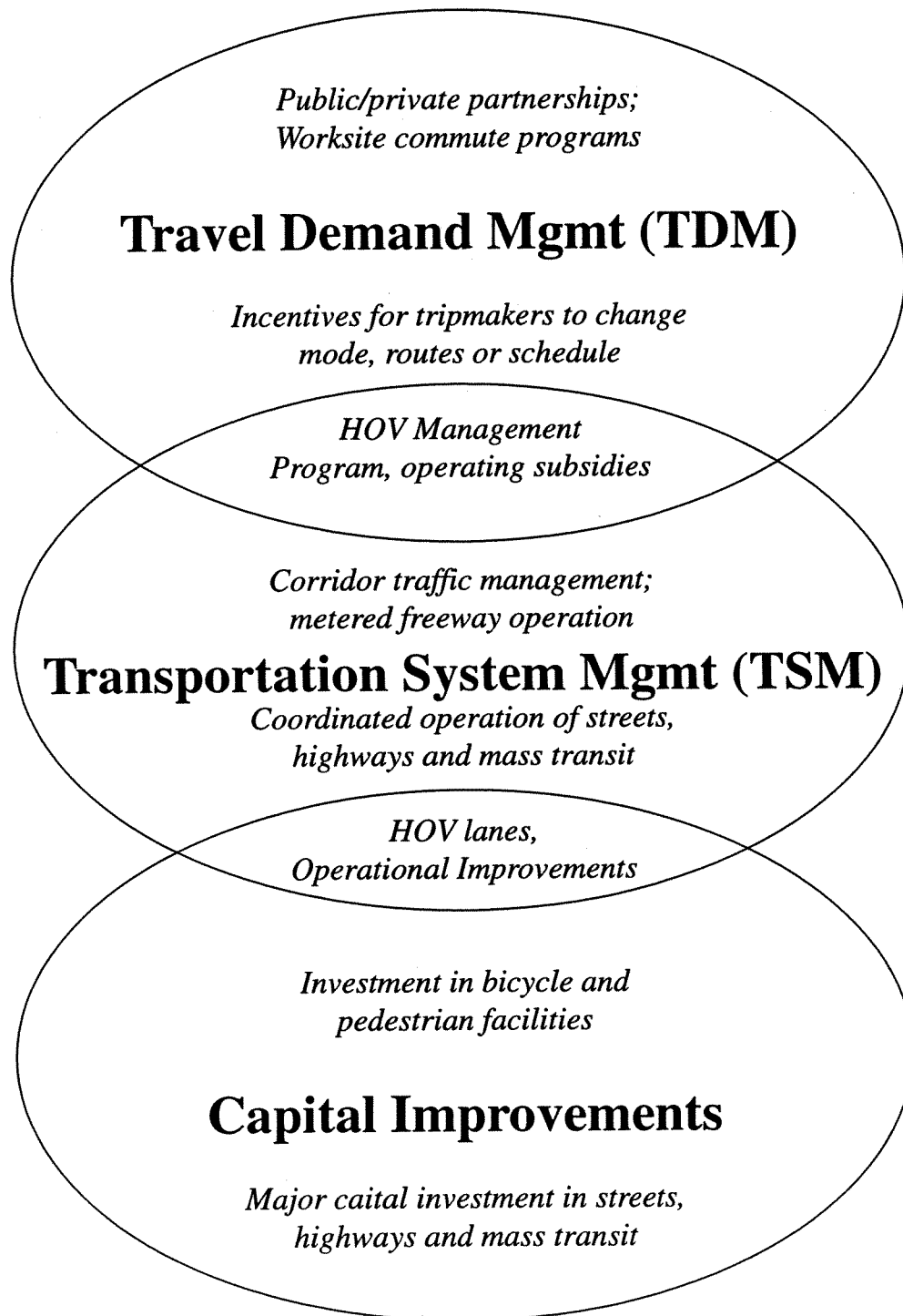
actions that employers may take on a voluntary basis to promote and encourage alternative modes of travel.

Table 11 — Alameda County Travel-Demand Management (TDM) Program

ELEMENTS	FUNDING SOURCES	LEAD AGENCY	OTHER PARTNERS
The Required Program			
This program includes those actions local government must take to comply with the CMP, namely, the implementation of:	NA	Local	Planners and developers
Site-design guidelines that enhance transit/pedestrian/bicycle access	TFCA, TSM, STP and FCR	Local, CMA	Neighboring cities, management and transit agency, cyclists
Capitol improvements that contribute to congestion relief and emissions reduction			
The Countywide Program			
This Program includes those actions the CMA will take to support and supplement the efforts of local government:			
Guaranteed ride home	TFCA	CMA	Taxis, other providers
<u>Dynamic Ridesharing Pilot Project</u>	<u>FHWA</u>	<u>CMA</u>	<u>BART, MTC, Envin Def.</u>
Financial incentives for ridesharing and transit use	TBD	CMA	Local, employers
Telecommuting program	TBD	CMA (ABAG)	Local, employers
Transportation Information Support Program	TBD	CMA	Local, transit agencies and RIDES
Support a long-term, stable and reliable source of funding for transit investment and operations	TBD	MTC, transit operators, CMA	Local
The Regional Program			

ELEMENTS	FUNDING SOURCES	LEAD AGENCY	OTHER PARTNERS
This program includes those actions state and regional authorities should take to meet areawide needs:			
Cooperative funding for regional ridematching	TFCA, TDA Planning	CMA/AQMD/MTC	Employers
Regional ride home (to complement county program)	TFCA	MTC	CMA
Funding to implement transit coordination	STA, STP, TFCA	MTC	Transit operators
Funding for coordinated implementation of high-occupancy-vehicle lanes, express bus service and park-and-ride facilities	CR, TSM, STP, STA	Caltrans/MTC	Transit operators, CMA, local
Cooperative implementation of ramp metering and arterial improvements	TSM, STP	Caltrans	MTC, CMA
The Comprehensive Program			
This program includes all of the actions above, plus the voluntary efforts of employers other than city/county:			
Support Employer Transportation Managers Network	TFCA	Local	Local, employers
Transportation information for new employees	Private	Employers	Voluntary
Preferential parking for carpools, bicycles	Private	Employers	Voluntary
Flexible working hours	Private	Employers	Voluntary
Implementation of shuttle services where needed	TFCA	Employers/Local	Voluntary by cities, employers

Figure 10 — Travel-Demand Management Strategy for Congestion Management



FUNDING OF TRIP-REDUCTION PROGRAMS

Transportation for Clean Air Funds⁵

These laws permit the BAAQMD to collect a fee (up to \$4 per vehicle per year) for reducing air pollution from motor vehicles and for related planning and programs. The bill specifies the types of programs the fees may be used for as described below:

- implementation of ridesharing⁶ programs;
 - purchase or lease of clean-fuel buses for school districts and transit operators;
 - provision of local feeder bus or shuttle service to rail and ferry stations and to airports;
 - implementation and maintenance of local arterial traffic management, including but not limited to signal timing, transit signal preemption, bus-stop relocation and “smart streets”;
 - implementation of rail-bus integration and regional transit information systems;
 - implementation of low-emission and zero-emission vehicle programs and of demonstration projects in telecommuting (with some restrictions) and in congestion pricing of highways, bridges and public transit.
 - implementation of smoking-vehicles program;
- implementation of an automobile buy-back scrappage program operated by a governmental agency;
 - implementation of bicycle facility improvement projects that are included in an adopted countywide bicycle plan or congestion management program; and
 - the design and construction by local public agencies of physical improvements that support development projects that achieve motor-vehicle emission reductions. The projects and the physical improvements shall be identified in an approved area-specific plan, redevelopment plan, general plan or other similar plan.

The air-quality legislation references the trip-reduction requirement in the CMP legislation and states that congestion management agencies in the Bay Area that are designated as Transportation Fund for Clean Air program managers “shall ensure that those funds are expended as part of an overall program for improving air quality and for the purposes of this chapter (the CMP Statute).” The Air District has interpreted this language to allow a wide variety of transportation control measures—including expansion of eligible transit, rail and ferry projects—to be eligible for funding.

The Transportation Fund for Clean Air requires the Air District to allocate 40 percent of the revenue to an overall program manager(s) in each county. The CMA has been designated the overall program manager in Alameda County. The CMA has developed a program that allocates the funds as follows:

⁵ Incorporating the provisions of AB 414 [1995] and AB 434 [Sher; Statutes of 1991]

⁶ Ridesharing means carpooling, vanpooling or transit. Other trip-reduction projects, consistent with the county’s adopted CMP, are also eligible (e.g., police bicycle patrol projects).

- a maximum of five percent of the funds for program implementation and administration.
- seventy percent of the remaining funds to be allocated to the cities/county based on population with a minimum of \$10,000 to each jurisdiction; city/county population will be updated annually based on State Department of Finance estimates.
- thirty percent of the remaining funds allocated to transit related projects; all eligible applicants may apply for these funds for transit related projects.
- a city or the county, with approval from the CMA Board, may choose to roll its annual “70 percent” allocation into a future program year; any 70 percent funds not used by a city/county will be added to the available funds for the current year discretionary program.
- with approval from the CMA Board, a local jurisdiction may request programming of a multi-year project using its current and projected future year share of the 70 percent funds.

Surface Transportation Program

Surface Transportation Program funds are administered by MTC via the CMA. For travel-demand management purposes, the following projects could be eligible for Surface Transportation Program funds: highway projects including high-occupancy-vehicle lanes, signalization, transit projects, and bike and pedestrian projects.

Congestion Mitigation and Air Quality Improvement Program

Congestion Mitigation and Air Quality funds are administered by MTC via the CMA. For travel-demand management purposes, projects that are eligible include those types of transportation projects that improve air quality, such as ridesharing, bicycle and pedestrian projects.

PARKING CASH-OUT DEMONSTRATION PROGRAMS

A demonstration financial incentives program for public agencies was implemented in Alameda County in 1997 for one year. The program was implemented in four different areas of Alameda County—in the cities of Pleasanton, Oakland and Albany, and Alameda County—either for all employees or targeted work sites. In addition, in 1995 a similar program was implemented at the Lawrence Berkeley National Laboratory for a one-year period. The results for this program are not presented separately in this CMP, but are summarized in previous CMPs.

The purpose of the demonstrations was to provide opportunity for employees to choose alternative ways to get to work other than driving alone, to study the effectiveness of the program and to find out whether increasing the incentives available made a difference in program participation. The ultimate goal was to reduce single-occupant vehicle use.

The results showed that there is potential for changing commute choices if continuous sources of revenues could be found. Based on the results of these demonstration programs and guidelines developed by the California Air Resources

Board, policies will be developed to guide the CMA's implementation of this component of the CMP. Although this section of the CMP describes programs that are funded by Transportation Funds for Clean Air and the state Petroleum Violation Escrow Account, it should be noted that other jurisdictions in Alameda County provide transit subsidies or other types of financial incentives to their employees (e.g., city of Alameda, city of Pleasanton, city of Hayward STRIDES Program). More information on the results of the program and its implementation are available from the CMA.

Description and Results of 1997 Program

The cities of Albany, Oakland, and Pleasanton and Alameda County offered financial incentives ranging from \$1.50 per day to \$2.50 per day or Commuter Check transit vouchers to encourage employees to use an alternative to driving alone to work. All sites were located within one-quarter mile of transit and offered connections to BART. Free parking was available at all sites except three of the four Alameda County sites. Parking was at capacity at all sites except Albany. All agencies offered some travel-demand management-type element to encourage employees to not drive alone (e.g., flexible work hours, commuter matching services, Commuter Checks, telecommuting, bikes on-site), but only the city of Pleasanton offered a comprehensive travel-demand management program that included all of the above as well as a financial incentive.

Financial Incentive Program Results

The results showed that a minimal financial incentive encouraged people to carpool, take transit, bicycle or walk to work instead of driving alone. As shown in Table 12, 16 to 20

percent of the Albany, Oakland and Alameda County participants changed their commute behavior after the implementation of the program. This is a three- to eight-fold increase over baseline participation. (It should be noted that all jurisdictions had some employees using alternative modes before the inception of the program, which ranged from three to five percent for the three agencies that did not have established programs and 40 percent for Pleasanton, which did.)

Pleasanton was the exception; they actually showed a decrease in participation for this study year. But overall, Pleasanton's program can be considered a success based on the increase in employee participation since the program started in 1993. Employee participation in 1999 was seven times more than in 1993, and a 100 percent increase has been observed between 1997 and 1999. And Pleasanton's program had a higher percentage of employee participation with their existing financial incentive of \$1.50 per day and a comprehensive travel-demand management program than the other agencies realized with financial incentives alone, which could indicate that the level of participation can be doubled with a more comprehensive travel-demand management program.

Small Investment Provides Good Return

The program resulted in savings in number of commute trips, gasoline and fuel costs as shown in Table 13. Between 4,900 and 20,625 commute trips per year were saved, depending on the location. This corresponds to an annual fuel cost savings of \$4,500 to around \$17,000 for each agency participating. Converted into personal gain for each participant, the total annual benefit per participant including fuel

costs and amount paid to each participant ranged from approximately \$270 to \$400 per year per participant. This would appear to indicate that, with a small investment, a lot is gained in terms of reducing congestion and stress and improving air quality.

Transit Accessibility and Effectiveness of Financial Incentives

Access to transit has an impact on the success of financial incentive programs. Examples in three of the jurisdictions appear to support this conclusion. Albany observed that the majority of participants rode their bicycle, walked or took short transit trips. Comments received from Albany employees indicated that longer distance trips required too many transfers. Faced with available free parking and too many transfers, these employees chose to drive alone.

With the opening of the Dublin/Pleasanton BART station in 1997 and ACE Commuter Rail in 1998, Pleasanton observed a substantial increase in participants in their program using these transit services instead of their cars to get to work.

Oakland worked with AC Transit to relocate a bus stop in front of the site. While it is not certain if the increased participation at the Oakland site was due to the bus stop relocation or the financial incentives program or both, there was an increase in participation with program implementation.

What if 20 Percent of All Alameda County Employees Participated?

In order to explore the full effectiveness of financial incentive programs, staff asked the question, "What if 20 percent of all Alameda

County employees participated in financial incentive programs?" Using reasonable assumptions for number of employees and gas costs and applying what was learned from the 1997 demonstration program, 145,000 employees could be expected to participate in a financial incentives program in Alameda County at an annual cost of \$40 million to 60 million. However, 24 million gallons of fuel would be saved at savings of about \$44 million dollars. Further, applying the BAAQMD's guidelines for estimating emissions reduction, such participation would reduce pollution by more than 200,000 tons a year, and daily vehicle commute trips could be reduced by about 10 percent.

What Can be Done Next?

Based on the results of the demonstration program, financial incentives programs appear to have potential for reducing congestion and improving air quality for a small investment if it could become funded through a continuous revenue stream. The CMA is not able to mandate these types of programs, so implementation is encouraged in the following ways.

Public Agencies

For public agencies, communities are encouraged to internalize the incentive program through the General Fund or other dedicated funding source. The program could be added as an employee benefit, although the CMA recognizes that this could be difficult in some cities, particularly those with unions. The program could be encouraged in the private sector as part of the project development review process for new development. And it could be coupled with other CMA programs such as the guaranteed ride home program, which offers the

insurance that those commuting by an alternative mode are guaranteed a ride home. The future of new programs as well as ongoing ones is uncertain. Beginning with the 1996-97 program, BAAQMD no longer allows Transportation Fund for Clean Air funds, formerly known as AB 434, to be used for direct subsidies to employees, including parking cash-out programs. Although the city of Pleasanton is continuing with their program without Transportation Fund for Clean Air funding, it will be subject to review and approval by the city council as a part of the annual budget review. Other jurisdictions have indicated their intent to try and find ways to continue the program, but funds were not committed and the programs were eliminated.

CONGESTION PRICING STRATEGIES

The Alameda County CMA has secured funding from MTC, Caltrans and the Federal Highway Administration to conduct a feasibility study for a high-occupancy toll (HOT) lane in the I-680 corridor. The study will evaluate a number of pricing options and analyzed a number of key factors such as physical constraints, institutional opportunities and constraints, operational issues and revenue potential 3-year demonstration project. The Study concluded in April 2003, found that a Hot lane would be operationally, physically and financially feasible. The CMA Board approved pursuing funding for and implementation of a three demonstration project in the southbound direction. Opportunities for contra-flow lanes will also be examined. Sufficient detail will be provided to determine if a pilot project is warranted to further test the applicability of pricing in this corridor.

In addition to the I-680 three-year demonstration project, study, the CMA will investigate the following pricing concepts: free transit on Spare the Air days, off-peak transit fare discounts, and parking ticket surcharges by Alameda County jurisdictions with revenues to be used for transit.

COMPLIANCE/CONFORMANCE

The CMA must annually monitor conformance with the adopted CMP.⁷ Among other requirements, the CMA must determine if each city and the county has adopted and implemented a trip-reduction and travel-demand ordinance. In the early 1990s, a transportation control measure in the region's Clean Air Plan required employers with 100 or more employees to conduct activities to encourage an increase in the use of alternatives to driving alone. BAAQMD oversaw implementation of this program; however, later legislation prohibited mandatory employer-based trip-reduction programs.⁸ The CMA therefore cannot require such programs in determining whether cities or the county are in compliance with the CMP.

Local jurisdictions shall have until September 1 of each year to adopt and implement the Required Program, which focused on adoption and implementation of site-design guidelines and adoption and implementation of a capital improvement program.

⁷ Government Code Section 65089.3 (a)

⁸ Senate Bill 437 (Lewis)

Table 12 — Financial Incentive Participant Summary

	ALAMEDA COUNTY	ALBANY	OAKLAND	PLEASANTON
# Eligible Employees	573	130	400	380
# Participant Before	12 (3%)	7 (5%)	11 (3%)	147 (40%)
# Participants After	108 (19%)	30 (23%)	93 (23%)	130 (34%) special circumstances
Percent Change	16%	18%	20%	- 6%
Target Participants	55	10	80	N/A (existing program)

Table 13 — Financial Incentive Program Savings and Costs

	ALAMEDA COUNTY	ALBANY	OAKLAND	PLEASANTON
Commute Trips saved/year	15,925	4,900	14,650	20,625
Average VMT/trip	19	16	21	15
Gallons fuel saved/year	12,103	3,214	12,306	12,375
Fuel costs saved/year (\$1.40/gal.)	\$17,000	\$4,500	\$17,200	\$17,300
Fuel cost savings/persons	\$157	\$150	\$185	\$133
Financial gain/person from program	\$112	\$231	\$222	\$149
Total financial benefit/person	\$268	\$381	\$407	\$282

If the CMA finds that a local jurisdiction has not adopted and implemented the Required Program, it may find the local jurisdiction in “non-conformance.” At the time of the finding, the CMA would provide recommendations for corrective actions. If after 90 days the local jurisdiction is still in non-conformance, the CMA is required to provide notice to the California Transportation Commission and the State Controller. The notice includes the reasons for the finding and evidence that the CMA correctly followed procedures for making the determination.

The State Controller would then withhold the non-conforming jurisdiction’s increment of subventions from the fuel tax made available by Proposition 111, and the jurisdiction will not be eligible to receive funding for projects through the federal Surface Transportation Program and Congestion Mitigation and Air Quality Program.

If within the 12-month period following the receipt of a notice of non-conformance, the CMA determines that the city or county is in conformance, the withheld Proposition 111 funds will be released. If after the 12-month period the city or county has not conformed, the withheld Proposition 111 funds will be released to the CMA for projects of regional significance included in the CMP or a deficiency plan.

LOCAL GOVERNMENT RESPONSIBILITIES

In order to be found in conformance with the CMP, local jurisdictions must:

- By September 1 of each year, certify to the CMA that it has adopted and implemented site design guidelines that enhance transit/pedestrian access and implemented capital improvements that contribute to congestion management and emissions reduction.
- Local jurisdictions shall have until September 1 of each year to adopt and implement the Required Program.

CHAPTER SIX

Land-Use Analysis Program

A CMP must contain a program to analyze the impacts of land-use decisions made by local jurisdictions on regional transportation systems.¹ The program must generally be able to estimate the costs associated with mitigating those impacts, as well as provide credits for local public and private contributions to improving regional transportation systems.

The law does not change the role of local jurisdictions in making land-use decisions or in determining the responsibilities of project proponents to mitigate possible negative effects of projects. However, the CMA has the ability to apply certain sanctions, as described in Chapter 8, if the local agency does not comply with the requirements of the law.

The intent of the land-use analysis program is to:

- better tie together local land-use and regional transportation facility decisions;
- better assess the impacts of development in one community on another community; and
- promote information sharing between local governments when the decisions made by one jurisdiction will have an impact on another.

The land-use analysis program in Alameda County is a process designed to improve upon decisions about land-use developments and the investment of public funds on transportation infrastructure in Alameda County. It is intended

to provide a quick and efficient service by maximizing the intergovernmental contacts before major land-use development decisions are completed. To work best, the CMA is involved at the very early stages of the land development process. The process is intended to work in a positive, cooperative fashion that supports the needs of local, county, regional and state governments.

WHAT'S INCLUDED IN THE LAND-USE ANALYSIS

As noted above, the state requires the land-use program to assess the impacts of land development on "regional transportation systems". In the 1991 CMP, it was presumed that the roadway system designated in the CMP was the highway/street component of this regional transportation system.

With the passage of the federal Intermodal Surface Transportation Efficiency Act of 1991, MTC was required to develop a Metropolitan Transportation System that included both transit and highways. MTC contracted with the congestion management agencies in the Bay Area to help implement the federal legislation and to use the CMPs to link land-use decisions to the Metropolitan Transportation System.

Therefore, a distinction is made between the CMP network that is used for monitoring conformance with the level-of-service standards (see Chapter 3) and the Metropolitan Transportation System that is used for the

¹ California Government Code Section 65089(b)(4)

CMP's land-use analysis program. By using the Metropolitan Transportation System for the land-use analysis program, impacts on the CMP-designated system will continue to be identified, since it is a subset of the Metropolitan Transportation System. The broader definition of "regional transportation systems" will encourage early identification of impacts on a larger system of roadways and explicitly include transit system impacts. Proactive responses to these early identifications of impacts may occur during corridor or areawide studies, during the preparation of local or regional capital improvement programs, or during the environmental review of specific land developments and transportation improvements.

The CMA acts as a resource to local governments in analyzing the impacts of proposed land-use changes on regional transportation systems. This includes providing the dueing-travel-demand model to produce forecasts for proposed general plan amendments and other large-scale developments if the local jurisdiction publishes a Notice of Preparation for an environmental impact report. CMA staff could also be involved in discussing impact assessment approaches and impacts on the Metropolitan Transportation System. The California Environmental Quality Act already provides a framework for such assessments. The CMP process makes maximum use of the California Environmental Quality Act process, while also filling in some gaps that the Act may not address.

Credits

Some cities within Alameda County charge traffic-impact fees to pay for road improvements. The Tri-Valley Transportation Council approved a subregional traffic mitigation fee in early 1999. The fee is applied

to regional transportation improvements in the Tri-Valley Transportation Expenditure Plan. The city of Livermore also adopted a traffic-mitigation fee in 2001 to fund regional transportation projects in the city of Livermore. If such an areawide traffic- and/or transit-impact fee is adopted in the future, it will include a system of credits, so that developments that have paid once for a regional traffic (and/or transit) improvement will not be unfairly "double billed" for contributions to the same improvement. Credits for some local impact improvements may also be considered.

LAND DEVELOPMENT PROJECTS SUBJECT TO REVIEW

The purpose of the CMA review is to assure that regional impacts are assessed, that appropriate mitigations are identified, and that an overall program of mitigations can be implemented. For purposes of the land-use program, the Metropolitan Transportation System is used to assess transportation impacts of land-use development.

The CMA will review transportation analyses of proposed land developments when a general plan amendment and/or an environmental impact report are required. For environmental impact reports, the CMA will review and comment appropriately on notices of preparation, draft, supplemental and final documents. A description of each of these follows.

General Plan Amendments

The 1993 CMP identified general plan amendments as the most appropriate stage of review to consider, for these reasons:

- General plan amendments are normally processed well before any construction takes place. This provides more time for transportation impacts to be analyzed and mitigated than would be available if the review took place closer to actual project construction.
- General plan amendments may only be considered by a city or county four times during any calendar year, by state law. This reduces the complexity and effort involved in CMA review.
- Most (but not all) general plan amendments are of a significant size.

Projects Consistent with Existing General Plans

In cases where development occurs consistent with existing general plan guidelines, general plan amendments are not the most relevant unit of impact analysis. In those cases, timing becomes the key factor. If decisions about transportation infrastructure investment occur at a slower pace than land development, the result can be deterioration in level of service on the existing system. Large-scale projects that are consistent with existing general plans, but which may impact the regional transportation system, often require the preparation of an environmental impact report.

In February 1995, the CMA adopted the following policy for addressing large-scale development projects that are consistent with a general plan:

All notices of preparation of environmental impact reports be forwarded to the CMA for comparison with the 100-trip threshold and, if exceeded, the CMA will review and comment including requests for consideration of

transportation impacts and mitigation measures to metropolitan transportation system facilities in the same manner as the current policy for general plan amendments.

Development Sponsored by Agencies Other than Local Jurisdictions

The congestion management statute requires that the CMP include a program to analyze the impacts of land-use decisions made by local jurisdictions on the regional transportation system. For purposes of the CMP, local jurisdiction is defined as a city, county, or a city and county. However, other agencies such as colleges, universities, the Port of Oakland and federal facilities (Lawrence Livermore National Laboratory, for example) also have land-use discretion which could affect the operation of the Metropolitan Transportation System.

Development sponsored by state or federal agencies does not require local permitting approval and thus the CMA may not be notified of pending development. In order to correct this, for projects that meet the threshold requirements and require an environmental impact report/environmental impact study, it is the policy of the CMA to request these agencies to submit environmental documents for CMA review and comment.²

² For purposes of compliance with the Land-Use Analysis Program, the Port of Oakland is considered a governmental subdivision of the city of Oakland. Thus, the Port shall be required to submit environmental documents to the CMA for review and comment subject to meeting the threshold criteria and preparation of an environmental impact report/environmental impact study.

DEVELOPMENT REVIEW PROCESS

The tiered land-use analysis process described below applies to general plan amendments (Tier I[a]) and notices of preparation for environmental impact reports for projects consistent with the general plan (Tier I[b]). Screening criteria are described below. A summary of the Tier 1 requirements is presented in Table 14, while the development review process for Tier I is shown in Figure 11. The method of analysis is further detailed in the Land-Use Analysis (CMP Technical and Policy Guidelines), which is incorporated into the congestion management program by reference.

The CMA will be responsible for determining whether an application meets the 100 p.m. peak-hour trip-generation threshold criteria. The p.m. (afternoon) peak hour was chosen because in most Alameda County cities, traffic is worse in the p.m. peak hour than in the morning or weekend peak periods. The 100-trip threshold was chosen because it is the level at which most cities ordinarily require a traffic impact study to be prepared. Examples of projects that can generate 100 or more p.m. peak hour trips are: 100 or more single-family homes, 165 apartment units or 135 hotel rooms, or more than 45,000 gross square feet of office space. It must be noted that such projects, when part of a proposed general plan amendment, would only qualify for review if they generated 100 *more* p.m. peak-hour trips than the existing land-use designation.

Tier I(a) — General Plan Amendments

This tier involves a review by the CMA of general plan amendments, concurrently with the city's or county's approval process. Analysis at the general plan amendment stage, rather than at the project stage, allows cities to proactively

plan development, taking into account regional transportation impacts and providing ways to finance transportation costs in advance of development proposals at the tentative map stage or later. Every application for a general plan amendment will be forwarded to the CMA for review.

The CMA will review the impacts of the proposed general plan amendments on the Metropolitan Transportation System through existing environmental review processes conducted by the local agencies. Upon receiving the initial general plan amendment application, the local agency will forward the general plan amendment proposal to the CMA consistent with the Technical and Policy Guidelines (see Appendix G). The local agency will analyze the data and identify any necessary mitigations as part of the environmental process.

Local jurisdictions are responsible for modeling the proposed general plan amendment using the most recent CMA-certified travel-demand model. The local agency will then send the environmental document to the CMA for a 30- to 45-day review and comment period. The local agency will send a copy of both the draft and final decision/notice of determination to the CMA, so that the data may be incorporated into the countywide travel model's land-use database, thus keeping it current.

Figure 11 — Review Process for Assessing the Impacts of Local Land-Development Decisions on the Transportation System

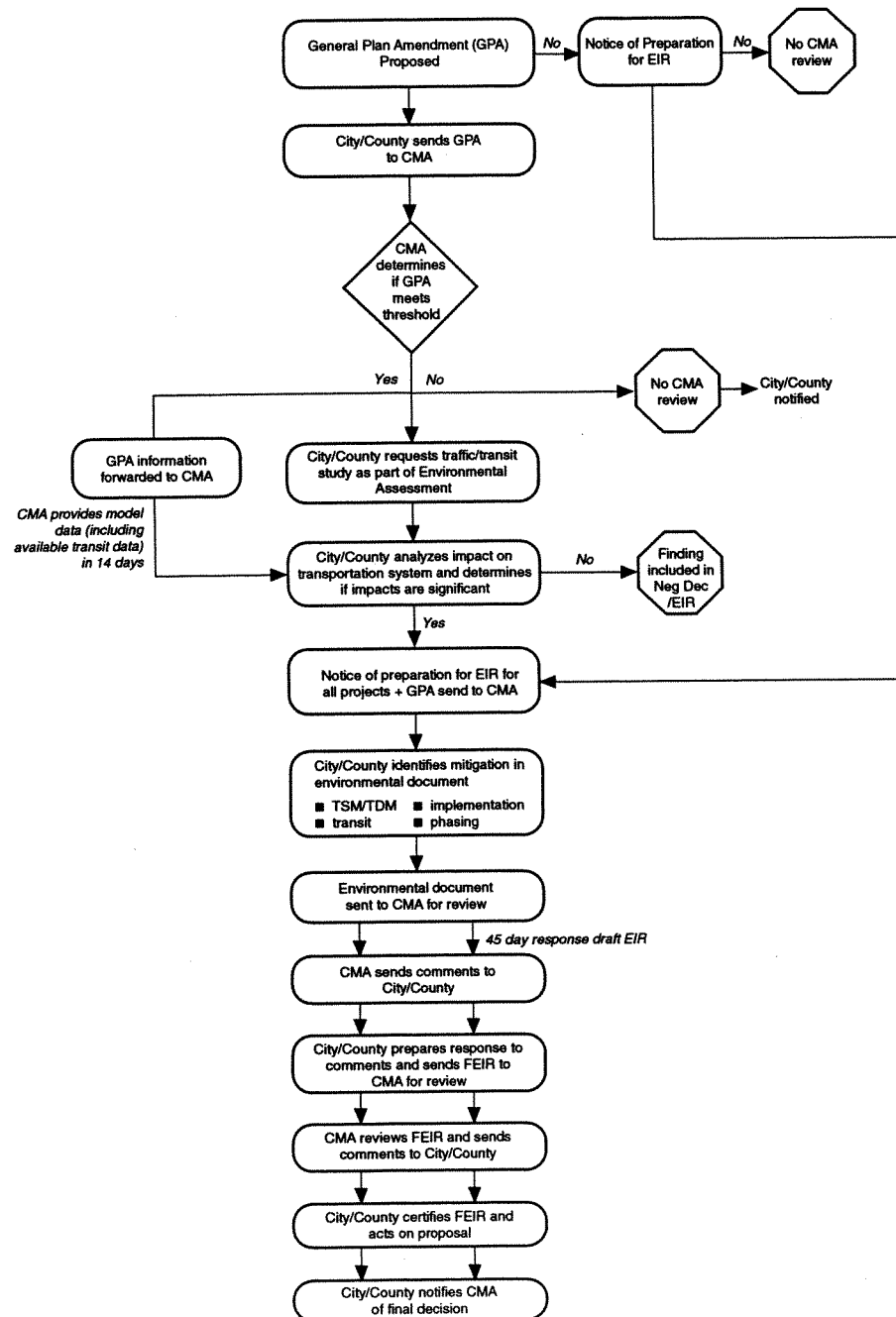


Table 14 — Land-Use Analysis Program Tier I Requirements

ACTION	GENERAL PLAN AMENDMENTS	NOTICES OF PREPARATION
Submit to CMA?	Mandatory	Mandatory
Timeframe for submittals	Ongoing	Ongoing
CMA comments?	Yes	Yes

Note: The CMA will review and comment on general plan amendments and notices of preparation that exceed the threshold of generating 100 p.m. peak-hour trips more than the adopted general plan land-use designation for general plan amendments or 100 p.m. peak-hour trips more than existing uses for projects consistent with the general plan.

General plan categories can encompass a fairly wide range of trip generators. For example, a parcel may be zoned for “Medium-High Density Residential, 16-30 units per acre”. There is a variation of almost 100 percent between the low and high ends of the allowable density. A variety of land uses with a wide range of trip generation may be allowed within a single zoning designation. In both cases, market conditions at the time of construction will dictate the actual uses, but until then, reasonable assumptions will have to be made regarding the specific trip generation characteristics input to the model.

Tier I(b) — Large-Scale Projects Consistent with General Plan: Notices of Preparation

This tier involves a review by the CMA of notices of preparation of environmental impact reports, concurrently with the city’s or county’s approval process. Every notice of preparation and draft and final environmental document will be forwarded to the CMA for review. The CMA

will be responsible for determining whether an application meets the threshold criteria for CMA review and comment. The same review and modeling process described under Tier I(a) applies to Tier I(b).

Tier II

On a biennial basis when ABAG publishes new land-use projections (typically for even-numbered years), the Tier II analysis will be performed by CMA staff based on ABAG’s latest projections, with local input on the distribution of ABAG projections within each jurisdiction. Local jurisdictions will have 60 days in which to provide input on how their respective ABAG projections will be distributed by traffic analysis zones.

ABAG-consistent data (at the countywide level and for each jurisdiction) will always be used for CMP purposes other than the Land-Use Impact Analysis Program.

RESPONSIBILITY FOR MODELING

The countywide model has been updated to reflect ABAG's forecasts in *Projections 2000-2* for base years 2005 and 2025. The CMA Board amended the CMP requirements on March 26, 1998, so that local jurisdictions are now responsible for travel-demand modeling. The countywide model agreement between the jurisdiction/agency and the CMA is required before the model information can be released to the jurisdiction/agency or its consultant.

AREAWIDE TRAFFIC IMPACT MITIGATION FEES

An areawide traffic impact fee and/or revenue measure such as one establishing an assessment district could generate funds necessary to plan for and implement transportation mitigation measures related to land development. The fee could be collected and expended in specified zones within the county. Traffic impact fees are contemplated in the CMP law as a proactive method of addressing transportation needs arising from land development. Such fees or measures could be negotiated as part of the corridor/area management planning process described later in this chapter.

In 1996, the CMA completed a feasibility study for a countywide or areawide traffic mitigation fee as an approach to address the impacts of land development on the regional transportation system. The study evaluated the advantages, disadvantages, opportunities and constraints of implementing traffic impact mitigation fees on a multi-jurisdictional basis.

The study recommended that the CMA not proceed with an areawide traffic impact fee at that time because, among other things, there was not enough strength in the local economy to support higher fee levels, coupled with concern that a new fee would constrain growth, particularly in urban areas where redevelopment projects already face higher costs than in suburban areas.

The study did recommend that the CMA adopt the following policies:

- support agreement among local jurisdictions to adopt an areawide fee within a planning area;
- identify projects of countywide significance; and
- consider integrating adoption of a countywide fee with a campaign for a sales tax extension or gas tax increase so that the development community and the voters each see a benefit in sharing costs with the other.

Since the study was completed, the Tri-Valley Transportation Council has adopted an areawide traffic fee, and Measure B was passed by Alameda County voters.

The CMA intends to re-evaluate the feasibility of Countywide or area-wide impact fees as part of the MTC-CMA Transportation and Land use Work Program.

JOBS/HOUSING BALANCE

Two-Phase Approach

A current public policy trend in California is to encourage communities to seek a balance between jobs and housing in order to reduce

traffic congestion. Ideally, achieving such a balance would allow workers to live near their jobs. Day-to-day trip attractions—such as stores, banks, dry cleaners or child care—would also be within walking or biking distance of housing and jobs. Some have argued that shortening the length of trips would reduce the number of trips on the regional transportation system, improve air quality by reducing VMT and allow more travelers to walk or bicycle to their destinations.

Countywide Transportation Plan, CMA staff worked with the CMA Board and ACTAC to further develop these strategies based on the following concepts:

The 1991 CMP acknowledged the controversy associated with the concept of jobs/housing balance. In response, that CMP took a two-phase approach. Phase I, carried out during fiscal year 1992-93, included a literature search and the development of a working definition of jobs/housing balance. Phase II, implemented during fiscal year 1993-94, involved further development of possible jobs/housing balance strategies identified as part of the Phase I study.

Phase I Conclusions

The Phase I Report entitled “Jobs/Housing Balance and Other Strategies for Coordinating Transportation and Land Use” (March, 1993) concluded that, at least under current conditions in the Bay Area, the concept of a community-based workforce is not realistic, and that “it is unlikely that a local or countywide effort to balance jobs and housing would produce significant congestion relief.”

Phase II Work Program

The Phase I report recommended two alternative strategies that may prove more effective in coordinating community development and transportation investment than the establishment of jobs/housing balance ratios. During fiscal year 1993-94, in conjunction with the preparation and adoption of the Alameda County

- The CMA should support, where appropriate, local plans to enhance the productivity of transit investment through such measures as supportive zoning, urban design/planning, and development approvals.
- The CMA should give investment priority to those highway and transit operational improvements and major capital projects that are identified in the corridor/areawide management planning process.
- pair ramp metering with geometric metering at gateways to the metropolitan area; and
- coordinate the operation of freeways and parallel arterials and when and where to rely on transit as a corridor's primary strategy of traffic management.

At the same time, the CMA recognizes that land-use planning is solely the purview of local governments.

A corridor/areawide transportation management planning process was adopted by the CMA in May 1994 and is described in the Alameda County *Countywide Transportation Plan*. The process is based on the principle of cooperative planning and coordinated action by local governments, Caltrans, transit agencies, the CMA and MTC. Together, the corridor/area management participants address how to:

- reconcile the competing demands that local and long-distance traffic make on the capacity of the freeway system;
- reconcile continuing population and employment growth with the finite capacity of the freeway system;
- reconcile the movement of people and goods;
- prevent pass-through traffic from using local streets;
- reconcile high-occupancy vehicle lanes with plans to meter freeway ramps;

TRANSIT-ORIENTED DEVELOPMENT IN ALAMEDA COUNTY

BART, the local jurisdictions and community groups in Alameda County ~~have been~~ promotesupporting opportunities for transit-oriented development. Transit-oriented development provides high-density mixed-use and pedestrian-oriented development accessible to transit and other non-motorized forms of transportation. It focuses on establishing mixed uses such as combining employment, residential and retail town centers near transit hubs to provide intermodal opportunities (e.g., BART, bus, autos, bicycling, walking) to reduce reliance on single-occupant vehicles. Examples of transit-oriented development projects underway or included in the long range transportation plan in Alameda County ~~include~~ are the Fruitvale BART Transit Village in Oakland, the MacArthur BART Intermodal Transit Village in Oakland, the BART Transit Village in San Leandro, the downtown Redevelopment Program and the Cannery Area in Hayward, and the two BART transit villages in Dublin. In support of transit-oriented development, the CMA and MTC have set aside Transportation for Livable Communities funds to be used as an incentive to local agencies that support and expedite the approval of transit-oriented development within their jurisdiction.

REGIONAL AGENCIES SMART GROWTH STRATEGY

ABAG—in conjunction with BAAQMD, the San Francisco Bay Conservation and Development Commission, MTC, the Regional Water Quality Control Board, and the Bay Area Alliance for Sustainable Development—is conducting completed the Regional Alliances Smart Growth Strategy Bay Area Alliance for Sustainable Development Regional Livability Footprint Project. The overall goal was to achieve support among public officials, civic leaders and stakeholder organizations for a preferred land-use pattern that will inform decision-makers on how the Bay Area could grow over the next 20 years. The study resulted in SMART Growth Projections 2003 which focuses development in the urban core. Projections '03 land use will be used for update of the Regional Transportation Plan in 2005. , started in September, 2000, is anticipated to be completed by November, 2002. At that time, the ABAG Executive Board could recommend a smart growth alternative Projections forecast based on the study results.

MTC-CMA Work Program for Integration of Transportation and Land Use – “T Plus”

In April 2003, MTC in partnership with the Bay Area CMA's adopted a work program to better integrate transportation and land use. The program will be initiated in FY 2003-04 and includes the following tasks: administration of Transportation for Livable Communities/Housing Incentive Program; Smart Growth Policy Development and Program Implementation; Actions to Support Resolution 3434 – Regional Transit Program, Mitigation Programs and various workshop and training efforts. A Task Force composed of staff from local jurisdiction, transit operators,

MTC, ABAG and Caltrans will work with the CMA on implementation of the program. The first step is development of policies relating to SMART Growth and Transit Oriented Development to be included in the Countywide Transportation Plan Implementation measures will be amended in to the CMP as appropriate.

RELATIONSHIP TO CALIFORNIA ENVIRONMENTAL QUALITY ACT

Under the California Environmental Quality Act, local governments still have lead agency responsibility for preparing environmental impact reports and conducting the associated transportation analyses. Local governments are responsible for proposing and analyzing methods to reduce negative effects on the transportation system. The CMA will comment throughout the environmental impact report process, keeping local governments informed about the adequacy of the analyses and approving the use of any local or subarea transportation models used, or providing the local agency with access to information from the countywide travel model on cumulative impacts of projects.

In the case of smaller projects, local governments may wish to require project proponents to enter an agreement to provide a “fair share” portion of the mitigation for a cumulative impact. This addresses the legislative requirement that the CMP must be able to estimate the costs associated with mitigating transportation impacts.

Environmental documents will typically identify mitigation for the impacts of the proposed project. Two questions arise relative to mitigation proposals in environmental documents:

- Are the mitigation measures adequate to sustain the service standards in the CMP?
- Are the mitigation measures fully funded? If the environmental document shows full funding of mitigation measures, is the project sponsor expecting state or federal funding for all or a portion of the measures?

If transportation mitigation measures are inadequate and/or are underfunded, there may be significant implications for the regional transportation system. Either might result in level-of-service standards being exceeded, which could jeopardize local government CMP conformance if an adequate deficiency plan is not prepared. Furthermore, an environmental document may rely on state or federal funding of mitigation measures. Such funding may not be consistent with CMA project funding priorities. The CMA's policy regarding mitigation measures is:

- Mitigation measures must be adequate to sustain CMP roadway and transit service standards.
- Mitigation must be fully funded to be considered adequate.
- Mitigation measures that rely on state or federal funds directed by or influenced by the CMA must be consistent with the project funding priorities of the CMA established in the Capital Improvement Program (CIP) section of the CMP, Tier 1 investment program of the *Countywide Transportation Plan*, Track 1 of the *Regional Transportation Plan*, or the *Federal Transportation Improvement Program*.

In addition, it is the CMA's intent to use the corridor/areawide management planning process as adopted in the *Countywide Transportation*

Plan to identify needed mitigation measures and for linking its funding decisions to needed mitigations.

Where disputes arise between two agencies as a result of the potential impacts of a project, the CMA may act as a mediator, if requested by one of the parties involved. Under the intent of the law, the CMA will require local agencies to establish a program for securing funding to mitigate the transportation impacts of their land-use decisions. The mitigations and funding sources may be the same as, but not limited to, those proposed in the California Environmental Quality Act process.

Techniques other than using the countywide travel model are available for assessing possible transportation impacts on the Metropolitan Transportation System. These techniques are documented in the *HCM*, and may be used, at the local jurisdiction's option, to help assess the impacts on the Metropolitan Transportation System even when such analysis is not required by the CMA. The local jurisdiction may want to do this to assure itself that a given project approval will not endanger its compliance with the CMP service standards.

RELATIONSHIP TO TRANSIT

Overview

To fully address the relationship between land-use development and its impacts on the regional transportation system, we must recognize the role that transit operators can play in the land-use planning and approval processes in Alameda County. Through the CMP process, local jurisdictions can be encouraged to develop and maintain a transit component of their general plan circulation element. Also, local jurisdictions can provide a forum for the transit

operators to participate more actively in land-use decisions.

Policies

The CMA encourages local jurisdictions to:

- consider transit impacts of new developments as part of site “traffic” impact studies.
- include documentation of existing ridership and loads on transit lines serving new development, and assessing the impacts on usage (additional trips) on those lines in their environmental impact analysis process.
- require transit mitigation of new developments, for both capital improvements and possibly operational costs, if transit services need to be added or enhanced due to new development.
- include a transit section in their general plan circulation element; AC Transit’s “Guide for including Public Transit in Land Use Planning,” can assist in the development of this section. (Note: AC Transit is in the process of updating this document.)
- include the appropriate transit operators in the land development review process; AC Transit’s “Transit Facilities Standards Manual” should be used to increase transit use to the site through appropriate design treatment. (Note: AC Transit is in the process of updating this document.)
- use transit as a mitigation measure for traffic and air quality impacts, in conjunction with the efforts of the transit operators; this could be accomplished through transit subsidies to employees and parking charges.
- promote new development along existing and funded new transit routes.
- reduce parking requirements for development that occurs along existing transit services.
- coordinate traffic signals within their own jurisdictions and with other jurisdictions on arterial streets served by transit, and provide traffic signal priority for buses on major bus routes.
- consult with appropriate transit operators before placing bus pullouts on major bus routes.

Environmental Assessment Checklist

Local jurisdictions can use the following environmental assessment checklist for guidance regarding design elements in development proposals that could facilitate the provision of transit services. The list has been divided into two sections, one that addresses development in areas with transit services, and one that covers developments that occur in areas without transit service.

This list is not intended to cover all aspects of every development, nor is it intended to replace transit operator review of specific environmental documentation. Greater detail on these and other design issues can be found in the two AC Transit documents referenced earlier.

Development Near Transit Services

- Transit planners consider one-fourth of a mile on either side of a bus line or transit station the prime “catchment” area for that line. This general rule should be applied to determine if a development is “near” transit services.
- The number of trips generated by the project and its impact on the existing transit service need to be addressed. If the trip generation cannot be absorbed with the current transit

capacity, the environmental document should address ways of mitigating these impacts.

- Pedestrians must have access between the transit service and the development. The site plan should provide good access between buildings and from buildings to the transit stops. Sidewalks should be provided on both sides of all streets to provide access to bus stops. Sidewalks and curb cuts at intersections should be designed for handicapped accessibility. Designs should avoid requiring pedestrians to walk through parking lots to access transit service.
- Where the environmental document raises the possibility of private shuttle services, an analysis of the cost of providing this service versus subsidizing existing transit service needs to be included.

Development in Areas Without Transit Services

An environmental review of a development that occurs in an area without transit service should be extensive, in order to avoid a design which precludes the extension of transit services.

- The number of trips should be assessed from the standpoint of the possible demand generated for new transit services. If the development is significant enough to create a strong demand for services, the environmental review should address a funding mechanism for the service. No statements should be made regarding the possible extension of transit services without consultation with the affected transit operator(s).
- Traffic lanes must be at least 11 feet wide to provide for satisfactory bus operation.
- Sidewalks should be provided.

- Intersection turning radii: It is desirable to have a corner radius of 30 to 55 feet (based on proximity of curb parking) in order to expedite right turns to and from through lanes.
- Roadway grades: Roadways prepared for bus service should have grades equal to or less than 12 percent for both uphill and downhill operations. Grades of eight percent or less are desirable.
- Traffic Index for Pavement Design: In order for the streets in a development to support bus traffic, their traffic index should be at least 8.0.
- A continuous, safe bicycle path system, including support facilities such as lockers should be considered.

COMPLIANCE AND CONFORMANCE

The CMA is responsible for monitoring conformance with the adopted CMP.³ Among the requirements, each city and the county must have adopted and be implementing a land-use analysis program. While the CMA does not have the authority to approve or deny local developments, it may find the local jurisdiction in non-conformance.

At the time of the finding, the CMA would provide recommendations for corrective actions. If after 90 days the local jurisdiction is still in non-conformance, the CMA is required to provide notice to the California Transportation Commission and the State Controller. The notice includes the reasons for the finding and evidence that the CMA correctly followed procedures for making the determination.

³ California Government Code Section 65089.3

The State Controller would then withhold the non-conforming jurisdiction's increment of subventions from the fuel tax made available by Proposition 111, and the jurisdiction will not be eligible to receive funding for projects through the federal Surface Transportation Program and Congestion Mitigation and Air Quality Program.

If within the 12-month period following the receipt of a notice of non-conformance, the CMA determines that the city or county is in conformance, the withheld Proposition 111 funds will be released. If after the 12-month period the city or county has not conformed, the withheld Proposition 111 funds will be released to the CMA for projects of regional significance included in the CMP or a deficiency plan.

If a proposed development was specified in a development agreement entered into prior to July 10, 1989, then it is not subject to any action taken to comply with the CMP, with the exception of those actions required for the trip-reduction and travel-demand element of the CMP.⁴

In some cases the CMA may find that additional mitigation measures are necessary to prevent certain segments of the CMP-designated system from deteriorating below the established level-of-service standards, before a conformance finding is made. In such cases, the CMA will require the local jurisdiction to determine whether the additional mitigation measures will be undertaken as a condition of project approval, or whether they will be implemented as part of a deficiency plan for the CMP system segments affected.

LOCAL GOVERNMENT RESPONSIBILITIES

Local jurisdictions will have the following responsibilities regarding the analysis of transportation impacts of land-use decisions:

- responsible for modeling, using the most recent CMA-certified travel-demand model, all general plan amendments and large-scale projects consistent with general plans that meet the 100 p.m. peak-hour threshold; the results of the model shall be analyzed for impacts on the Metropolitan Transportation System and shall be incorporated in the environmental document.
- forward to the CMA all notices of preparation, draft environmental impact reports/statements, final environmental impact reports/statements, and final disposition of the general plan amendment/development requests.
- work with the CMA on the mitigation of development impacts on the metropolitan transportation system.

⁴ California Government Code Section 65089.7

- biennially provide an update (prepared by the jurisdiction's planning department) of the estimated land uses likely to occur by utilizing ABAG's most recent forecast for a near-term and far-term horizon year; this land-use information will be provided in a format that is compatible with the countywide travel model.

In addition, each local jurisdiction must demonstrate to the CMA that the land-use program is being carried out by September 1 of each year.